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MASTER'S PROGRAM IN PUBLIC HEALTH

**FAMILY MEDICINE TRAINING PROGRAM**  
**EVALUATION PROJECT**

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## ABBREVIATIONS LITS

FM	Family Medicine
GP	General practitioner
PBL	Problem-based learning
PHC	Primary Health Care
PHCD	Primary Health Care Development
PHCDP	Primary Health Care Development Project
PIU	Project implementation unit
PAT	Project assistant on training component
MOH	Ministry of Health
SMU	State medical university
NIH	National Institute of Health
UNICEF	United Nations' International Children's Emergency Fund
WB	World Bank
WHO	World Health Organization

# FAMILY MEDICINE TRAINING PROGRAM EVALUATION PROJECT

## 1. ABSTRACT

Having analyzed the system of health financing, expenditures, health needs and indicators, in 1996 the Government of Armenia developed a new health policy, adopted a Primary Health Care strategy. Based on that, the World Bank's credit was obtained to launch the Project of Primary Health Care development. Introduction of family medicine is an important part of the Project, aiming at improvement of access to, and quality of, PHC services for the general population. In line with the World Bank supported project's objectives, a Family Medicine training program was developed at the National Institute of Health dealing with continuing medical education of physicians and nurses.

This project aims at evaluating the Family Medicine Training Program, which will first start in the autumn of 1999. The **goal** of the Family Medicine Training Program is to prepare general practitioners (family doctors) from currently practicing rural therapists and pediatricians, enabling them to provide a broad range of services to the general population at the PHC level after undergoing the 9-month training inherent in the job description. Hence, the trainees are pediatricians and therapists from rural ambulatories that will be rehabilitated and supplied with medical goods and equipment.

Evaluation of the training program aims at assessing whether the program has made an impact on the multidisciplinary knowledge and skills of trainees, increasing their competence and broadening the range of services they provide to the general population on the PHC level. To that end, the training program's objectives are increased knowledge by 40% and increased range of services by 30%. The evaluation program aims at detecting this change and making a causal inference. T-test of differences in means for 95% significant level will be used.

The pre- and post-tests of the training and control groups, or a the quasi-experimental study with non-equivalent controls, will be used to carry out the evaluation of the training program. The formative evaluation will provide insight into the training process – educational strategies and methods used, organizational aspects, etc.

The measurement instrument was designed and piloted, then a pre-test was carried out in the intervention group.

Time-table and analysis plans were developed, methodology and logistical issues have been addressed. The whole evaluation project's time frame is 18 months.

The evaluation will provide a basis for recommendations to be made to the MOH authorities and implementers of the training for further improvement and effectiveness.

## **2. SPECIFIC AIMS**

Political and economic independence and shift to the market economy posed the need to better budget scarce resources and give money the greatest possible value. In 1996 the Government of Armenia developed a new health policy, adopted a Primary Health Care (PHC) strategy (Annex 2) and applied to the World Bank for (WB) credit. "Health Financing and PHC Development Project" gained support from the WB. Introduction of family medicine is an important part of the Project, aiming at improvement of access to, and quality of, PHC services for general population. In this regard medical education has much to do in the preparation of appropriate health care providers - family physicians and nurses, able to meet new requirements and approaches.

This project aims at evaluating the Family Medicine Training Program, which will first start in the autumn of 1999. The evaluation will provide a basis for recommendations to be made to the MOH authorities and implementers of the training for further improvement and effectiveness.

## **3. INTRODUCTION**

### **3.1 BACKGROUND**

The new situation after independence appeared to be a challenge for policy makers to develop a new health policy, a new PHC strategy (Annex 2) and launch into reforming of all aspects of the health care system: leadership and management, financing, human resources, licensing, planning, hospital capacity, pharmaceuticals.

The excess number of hospital beds that were supported by the former Soviet system became a financial burden for the young republic with a shaky economy. Many achievements of the health care system - (i) services free to the population, (ii) well structured ambulatory-polyclinic network at the Primary Health Care (PHC) level with duplication of (iii) specialists and (iv) services at all levels of the health care system, huge number of hospitals, became more of a hindrance to the further sustainability of the system. Health indicators previously comparable to that of Western countries started to show a trend toward deterioration.[1].

One part of the health reform was molded into a program that got support from the WB. This is the Health Financing and Primary Health Care Development Project (hereinafter -Project). The Project has been developed by a national group of experts working at the Ministry of Health (MOH), led by the Minister of Health, and in consultancy with Dutch and WB specialists. The title of the Project hints about its two main components: improvement of health financing mechanisms on the one hand and development of PHC on the other hand.

The PHC strategy of the Republic of Armenia is based on the WHO definition of PHC and is directed towards attaining PHC characteristics: both physical and financial accessibility of care,

equity for all individuals in realizing their health potential, comprehensiveness, continuity, coordination.

### 3.2. LITERATURE REVIEW

Every health services system, as described in B.Starfield's book "Primary Care", has two main goals: optimization of health and equity in distributing resources. In the overwhelming majority of countries these two goals are balanced by means of Primary Care, introduced as Family Medicine [2]. Family Medicine is the oldest profession, but the youngest discipline, which has recently been interposed in many countries, particularly in the republics of the former Soviet Union. Why Family Medicine? First of all, it is efficient: 91% of all health problems are treated by the Family Doctor [2]; second, better diagnosis because of knowledge of previous history of health problems; third, continuing care for fixed practice population (individuals and families) and finally a Family Doctor's role as a co-ordinator being at the center of health care. Specialization threatens the goals of equity, being more expensive than primary care [2].

Very important and decisive are the following principles of Family Medicine: "(i) family medicine is community-based, (ii) doctor-patient relationship is central to family medicine, (iii) family physician is an effective clinician- meaning he has the special skills to provide care for the whole life cycle"[3].

According to the "godfather of quality assurance Donabedian" [6] the quality of health care consists of several factors: (i) "set of activities that go on within and between practitioners and patients -'process' of care; (ii) characteristics of the providers of care, of the tools and resource they have at their disposal, and of the physical and organizational setting in which they work - 'structure'; (iii) a change in a patient's current and future health status that can be attributed to antecedent health care - 'outcome'. . 'Structure' increases or decreases the probability of good performance [4]. Structure and process are the main domains of the Project interventions, striving at improvement of outcome.

According to a model for comprehensive medicine [5], a Family Doctor should be trained to diagnose and treat diseases and for this purpose the doctor should have an extensive knowledge of anatomy, histology, physiology, pathology and clinical signs and symptoms. Moreover, he/she should be trained to take the history of the patient and to perform a physical examination, to make a management plan for further examinations, to make the diagnosis, and based on diagnosis the family doctor should be able to design a program of treatment consisting of medical, surgical and eventually psychological/psychiatric treatment.

As Barbara Starfield states in her book "Primary Care", primary care should be provided by physicians best trained and most skilled in its practice, because family physicians (trained general internists and pediatricians) are more effective and more efficient in providing primary care than

specialists. Further, the success of primary care depends on successful primary care training and delivery.

The objectives of a training program must address (i) the ability to solve clinical and other problems in medical practice, (ii) the possession of adequate knowledge and understanding of the general structure and function of the human body and working of the mind in health and disease..., (iii) the possession of consultation skills, (iv) the acquisition of a high standard of knowledge and skills in the doctor's specialty, (v) the willingness and ability to deal with common medical emergencies, (vi) the ability to contribute appropriately to the prevention of illness and the promotion of health,...(n) the acquisition of experience in administration and planning, mastery of skills required to work in a team... [6].

Certain requirements that training programs must meet are in relation to the (i) product they are to give, (ii) aims and objectives, specifying what the trainee should be able to do after completing the course, (iii) content which is consistent with objectives, (iv) organizational, strategic and management aspects [7]. Consonant to this approach Dr. W. Boerma cites from a GP statement being formulated by the Leeuwenshorst group: "The educational aims of a training in general practice are formulated under three headings - knowledge, skills and attitudes [6].

According to R.M Harden et al [16], the organizational and strategic aspects of the training process are determined by the commitment to a shift from "traditional hospital-based approach to community-based education". Advantages of the latter are as follows: provides community orientation while medical students receive their training in a community setting, provides a useful learning experience. But it poses organizational problems related both to the PHC setting and the selection of health care personnel in the community. Lack of appropriate role models may misdirect the trainees' attitudes and skills. In this regard hospitals have certain educational advantages, being the traditional settings for clinical training, and providing teachers with an extensive educational background. Much of medicine, however, can be taught either in the community or in the hospital setting and the best choice will depend on the resources available [16].

Faculty development is another important constituent of a successful training program. Educational innovation will fail without talented teachers who enjoy what they do [22]. According to Marla Nayer [8], faculty development is a necessity if a switch to problem-based learning (PBL) is being considered. The PBL is meant to be student-directed and student-oriented. "In medicine, however, we are so concerned with adding to the curriculum to fill the mind that we can easily underestimate the importance of training it" [6]. This concern is closely related to the methods and strategies of training directed at developing and reinforcing the critical and analytical mind of medical students.

An evaluation must be designed and implemented in order to assess the impact of a training program. The goal-oriented approach to evaluation uses the objectives of the training program to be

criteria for determining its success [9]. Analysis of pitfalls and errors can provide information for introducing changes in training methods and curricula.

- Evaluation results must be timely and available when needed
- Evaluation results must be disseminated
- Evaluative studies are worthwhile only if they are used [10]

Another approach is a decision-focused one, which needs systematic provision of information for program management and operation [9]. This is actually the process evaluation, which adds credibility to the outcome evaluation results, showing causal relationships for the outcomes, the pitfalls, drawbacks and advantages of the training, and serving as the basis for further recommendations and effective decision. When properly designed and executed, the experimental or **quasi-experimental design** approach is the most powerful evaluation technique available for assessing the actual effectiveness or impact of a given program [11]. The National Board of Examiners administering the US Medical Licensing Examination acknowledged several areas of primary care - namely, ambulatory care, chronic care, care of the elderly, and preventive care as critically important, and placed a priority on generalist knowledge and skills in the examination [12]. Competence has several components including clinical knowledge, clinical decision making, clinical judgment, technical skills, attitudes, professional habits, and interpersonal skills. Each of these constitutes a domain of skill and knowledge that makes up the panoply of the physician's daily work [13]. In fact, without traditional methods of testing, it is difficult to define the knowledge and skill base of an individual doctor, and even with testing, the actual performance of the doctor is difficult to define [14].

The most important quality in an educational program is its relevance. Training programs for health personnel must enable the graduates to cope effectively with the problems they will encounter in the context of their work [15]. In this regard, two decision areas are of more importance in education: (i) student grouping, which includes whole class teaching, classes divided into smaller groups of seven or eight students and individualized learning where students work on their own, and (ii) choice of educational tools, meaning use of slides, audio- and videotapes, overhead projectors, handouts, simulators, exhibitions and patients [7]. PBL and student-centered approaches are much in favor of meeting students' needs and making training relevant.

### 3.3. DESCRIPTION OF THE PHC DEVELOPMENT COMPONENT OF THE WB SUPPORTED ARMENIA HEALTH PROJECT

The PHCD aims at improving population access to health services, making the PHC system work effectively and efficiently, and increasing community participation in making the system sustainable. One of the ways to achieve this goal is to introduce family medicine at that level. Family medicine (or general practice as interchangeable terms) has proven its sustainability both in the countries where it has existed for a long and in the countries where it has not had a long history yet.

Development of the PHC is a multi-component process requiring (i) certain work environment- rehabilitated and properly equipped PHC facility, (ii) human resources well-prepared in terms of not only medical aspects, but also planning and management, with capability to assess and respond to community health needs, with integrated knowledge of Family Medicine and Public Health.

As it was mentioned above, **introduction of family medicine** aiming at strengthening the PHC is one of the cornerstones of the PHCD component of the Project. The other one is development of rural medical infrastructure, i.e. **rehabilitation of rural ambulatories** (rural PHC settings), including renovation, provision of necessary medical and laboratory equipment (Annex 3), and a car. During the Project life, 70 ambulatories will be rehabilitated within Armenia. Medical personnel of these ambulatories is given priority for undergoing family medicine training at the NIH during the first three years.

According to the Project, introduction of family medicine in Armenia must be done through

1. establishing Chairs of Family Medicine
2. training of doctors and nurses
3. developing of PHC guidelines

In order to prepare family doctors and general practice nurses, Chairs of Family Medicine were established by the Minister's decree at the National Institute of Health (NIH), the State Medical University (SMU) and the Basic Medical College for Nurses (BMC). Apart from other tasks of Chairs (research, administrative), the following were projected as educational tasks:

- retrain currently practicing district therapists and pediatricians, as well as nurses, from the ambulatories<sup>1</sup> and polyclinics<sup>2</sup> into specialists in general practice on the one hand, and

<sup>1</sup> Ambulatories are outpatient settings in rural areas and small towns providing PHC services. More described in the text set forth (page 12).

<sup>2</sup> Polyclinics are outpatient settings with preventive, limited treating, also rehabilitating functions, where district pediatricians, therapists provide limited range of services in internal medicine, and narrow specialists (poorly duplicating the specialists at secondary and university clinics) work.

organize continuing medical education (CME) on the other hand. This is the task of the Family Medicine Chair at the NIH

- train Family Doctors from new graduates of the SMU in the vocational training program and expose SMU undergraduate students to training in family medicine at the SMU Chair of Family Medicine
- prepare general practice nurses from newly graduated nurses at the BMC

In order to fulfill their mission, the Chairs themselves need a long way to go:

- a. renovation of Chairs, provision with furniture and office equipment, laboratories for medical skills' development (skill-labs) and other necessary teaching equipment, that will promote learning. Accommodation is also envisaged for those trainees from outside Yerevan.
- b. training of trainers or faculty development
- c. curricula development for undergraduate, vocational, continuing medical and nursing education

Actually, what the PHC component of the WB Supported Armenia Health Project intends to do mostly pertains to improvement of the 'structural' component of quality of care based on Donabedian's definition of quality of care, aiming at improvement of process and outcome (4).

In 1997, a working group<sup>3</sup> developed the draft package of the Statement about Family Doctor and Qualification Requirements. The package was reviewed by all Head Specialists<sup>4</sup> of the MOH, was discussed many times, because debates between specialty societies about who should perform certain procedures put the Statement into a hot focus. It was adopted (Annex 4) in 1999 as a temporary one, subject to revision after a couple of years, based on the evaluation of PHC attainments. Thus, the family doctor's responsibilities and specialty requirements with wide range of multi-disciplinary knowledge and skills have been set. This has become a basis for curriculum development to train family doctors.

Within the frame of the WB supported Project, a Training Coordination Committee has been established at the MOH to settle all the issues related to family medicine training. The Training Coordination Committee is comprised of Heads of Family Medicine Chairs, representatives of involved educational institutions and MOH Department of Human

<sup>3</sup> The group was comprised of Heads of newly established Chairs of Family Medicine at the NIH and SMU, physicians working at the PHC system and well aware about health care problems at that level and a new policy to address these problems. The group was provided with literature about family medicine.

<sup>4</sup> A Head Specialist of the MOH is the highest authority in the relevant field: in therapy/internal medicine, surgery, infectious diseases, pediatrics, ophthalmology, etc.

Resources Development, the Head of the Project Implementation Unit (PIU), and the Project Assistant on Training Component from the PIU (the author of this thesis).

The training of trainers is not totally completed, and not all trainers are trained in teaching family medicine, in spite of being experienced teachers. PBL and student-centered approaches to medical education are innovative and not yet well developed in Armenia. Heads, and some members of the Chairs, have been in Holland, Norway, Israel, Estonia to get exposed to those experiences in the field. A small part of the training will take place in polyclinics- out of hospital settings, because of the low level of PHC services' utilization and lack of experienced teachers in these community-based facilities. As mentioned earlier, the best choice will depend on the resources available [16]. For some time to come, the multi-disciplinary training will be done by sub-specialists on the basis of specialized departments of university clinics, until the approach "GP trains GP" will be satisfactorily met and the shift can be made from hospital-based to community-based training.

With the aim of "faculty development" additional training courses are planned to organize abroad for Heads of Chairs, faculty members and clinical trainers during this academic year (1999-2000) in the countries with proven expertise in the field. Besides, till the end of the year 1999, consultants are expected to come from the United Kingdom<sup>5</sup> to help in the setup of Chairs, revise and advise on the curricula mentioned above. Actually, these curricula and educational plans of the above mentioned Chairs have been developed by the Chairs themselves, based on the international literature, studying the syllabi from other medical schools, their own experience and understanding of the concept of family medicine and new approaches to medical education. Thus, they are subject to further elaboration, evaluation and refining.

The approaches to training will include whole class teaching, small group sessions, individualized learning using a complex of academic lecturing, clinical teaching, problem based learning, case investigations and individual presentations. The training process in the above mentioned Chairs of Family Medicine is planned to start in September 1999. During the life of the Project, i.e. the first three years of running the Chair at the NIH, the training will be devoted to preparing family physicians only from currently practicing therapists and pediatricians from rural areas. The training will last 9 months. The eligibility criterion for physicians is being from ambulatories already involved in the Project. There will be 23 trainees in the first group.

### **3.4 TRAINING PROGRAM OBJECTIVES**

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<sup>5</sup> The consultants were selected by a quality and cost based tender procedure of the World Bank.

The **goal** of this particular training program is to prepare general practitioners (family doctors) from currently practicing rural therapists and pediatricians, enabling them to provide a broad range of services to the general population at the PHC level after undergoing the 9-month training inherent in the job description. The training plans to provide them with multidisciplinary knowledge, thus broadening the range of their skills and services (Annex 4), and increasing their professional competence.

**1a.** By the end of a 9-month training program, knowledge of training participants will increase by 40%.

**1b.** By the end of a 4-month post-training practice, the range of services and clinical skills of those having completed 9-month training program will reportedly increase by 30%.

**2a.** By the end of a 9-month training program knowledge of training participants will be 30% larger compared with non-participants (control group).

**2b.** By the end of a 4-month practice the range of services and clinical skills of those having already completed the 9-month training program will be 30% larger compared to that in the controls.

#### **4. TRAINING PROGRAM EVALUATION PROJECT'S RESEARCH QUESTION**

Evaluation of the WB Project's training program aims at assessing whether the program has made an impact on multidisciplinary knowledge and skills of trainees, increasing their competence and broadening the range of services they provide to the general population on the PHC level.

The evaluation will use goal- and decision-focused approaches justified in further sections [9]. The evaluation will provide a basis for recommendations to be made to the MOH authorities and implementers of the training.

Pre- and post-tests of the training and control groups, or a quasi-experimental study design with non-equivalent controls, will be used to carry out the evaluation of the training program.

#### **5. EVALUATION OBJECTIVES**

1. Evaluation of learning (both knowledge and skills) the intervention group attained. Thus, the first objective is:

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- 1a. Determine the change in knowledge in training participants by the end of a 9-month training course by pre- and posttests.
- 1b. Determine the change in skills in training participants by the end of the 4<sup>th</sup> month of practice after completing the training course by pre- and posttests.
  
2. Evaluation based on comparison of pre-post- results of the intervention group with controls tested at the same period of time.
  - 2a. Determine the change in knowledge in training participants as compared to that in non-participants.
  - 2b. Determine the change in the range of services and clinical skills of training participants by the end of the 4<sup>th</sup> month of practice as compared to that in non-participants.

## **6. METHODOLOGY**

### **6.1 STUDY DESIGN**

The study design is a quasi-experimental design with non-equivalent controls, based on outcome evaluation. The latter emphasizes change in scores during pre- and post-tests of the training and control groups.

Pre-intervention	Intervention	Post-intervention
$O_{i_1}$	X	$O_{i_2}$
$O_{c_1}$		$O_{c_2}$

Where  $O_{i_1}$  and  $O_{i_2}$  are for the intervention group, and  $O_{c_1}$  and  $O_{c_2}$  - for the control group.

As mentioned above, the process evaluation will be used to explain and support the results of the final evaluation. It will provide data necessary to consider the training program implemented appropriately. Observations on practical classes and oral examinations, use of trainee-administered questionnaires, of results of written tests and exams, and check-ups of trainees' attendance lists will complete the picture.

### **6.2 STUDY POPULATION**

The study population is a group of 46 physicians from rural ambulatories<sup>6</sup>. Ideally, two physicians, a therapist and pediatrician, should work in a rural ambulatory with a team of two nurses and a midwife. In reality, many of the ambulatories are under-staffed due to

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<sup>6</sup> According to the 1998 data of the MOH, there are 206 rural ambulatories in Armenia

unequal distribution of health care providers. The 46 physicians comprise the intervention (case) and control groups.

The number of training program participants is rather small- 23. Thus, random assignment really does not make sense [18] and they are all included in the intervention group. Controls will be selected from the same target population, i.e. therapists and pediatricians working in rural ambulatories of marzes<sup>7</sup> covered by the WB supported Project.

**The intervention group:** therapists and pediatricians undergoing Family Medicine training, working in rural ambulatories and included in the PHCD<sup>8</sup> program.

**Controls:** therapists and pediatricians working in rural ambulatories not included in the PHCD program and, consequently, in the training. This means, that controls will not be provided with medical goods and equipment by the time of evaluation. This will be looked at and taken into account during the analysis of the reasons of not performing certain services. Controls will be matched to the identified cases from the intervention group based on age and marz (justified in the next section). Hence, the **inclusion criteria** for being a control are: therapist or pediatrician from the rural ambulatory not included in the training program and being from the same marz or geographic area and almost of the same age as the matched case.

### 6.3 MEASURING INSTRUMENT

A self-administered anonymous but identified, structured questionnaire is the measuring instrument during the pre- and post-test of intervention and control groups. The English version of the questionnaire is provided as Annex 1. As it was mentioned above, the generalist knowledge and skills are given priority by the National Board of Examiners administering the US Medical Licensing Examination [12]. Based on the testing objectives there are two main parts in the questionnaire: knowledge and performance/skills.

The questionnaire starts with a short disclosure statement and comprises 87 questions, out of which 11 questions relate to the respondents' personal data (age, sex, profession, previous training courses, number of population, patients per day, home visits, etc.), the next 10 questions are of self-assessment ("sense of comfort to serve the whole family"), conceptual and referral ones. Previous training courses are given special interest in the questionnaire because "the amount and type of previous training influence how quickly a

<sup>7</sup> Marz is an administrative-territorial unit in the Republic, equivalent of a county. There are 11 marzes in Armenia.

<sup>8</sup> PHCD program has been described above as one of the parts of the WB supported program aiming at rehabilitating rural ambulatories and providing them with medical goods and equipment required for PHC level. Ambulatories were included in the Program according to communities' willingness to make an investment - 10% of the rehabilitation cost of their ambulatories.

person can learn to perform a given procedure” [13]. Besides, to some extent it explains the level of knowledge revealed by the questionnaire.

The following 44 questions relate to knowledge and are of multidisciplinary in content. They are multiple-choice questions. The latter is the most frequently used method for assessing knowledge because of the logistic advantages, ease of construction and grading, and universal understanding of the meaning of the results [13].

The remaining 22 questions (there are several sub-questions that will give more than 87 if counted in the list) are more performance-related, pertaining to communication and medical skills. Several questions out of the last group provide choices for justifying not-performing a concrete service. This group of questions pertains also to self-assessment of own clinical competence, because among possible reasons offered to the respondent there is an option of “cautious about causing more harm than help to the patient”. Clinical competence exists when a practitioner has sufficient knowledge and manual skill, such that a procedure can be performed to obtain intended outcomes without harm to the patient [13].

The main part of the questionnaire has been designed based on the Test Book for General Practice approved by the MOH of Russia, being recommended by the Central Attesting Committee of the MOH of Russia, and edited by academician, professor V.Almazov and professor E. Shliakhto [23]. The questions were chosen from more than 5 000. Conceptual questions have been designed based on the Primary Health Care, B. Starfield and Anatomy of General Practice, W.Boerma, books. Performance questions are derived from the Encyclopedia of Clinical Examination, B. Baits [24] book and from requirements of the newly developed document, “Statement About and Qualification Characteristics of Family Doctor” (Annex 4). Performance questions could have been many more, but in all cases, there was doubt that respondents would try to show better performance activity than takes place in the reality. That is why validity of performance and self-assessment issues is being questioned by researchers, and is controversial [13].

The questionnaire was thoroughly revised and approved by the Head of the Family Medicine Chair at the State Medical University. Several knowledge questions seemingly easy or providing room for guess, were modified. The Head of the Family Medicine Chair at the National Institute of Health, where the training program will take place, was not involved in the questionnaire discussion due to plausible reasons - not to interfere with the evaluation and distort the results.

## **6.4 SCORING**

Scores are to be calculated for knowledge (including also few conceptual questions) as follows: each question is given a score based on the number of right choices, e.g., a

question having four right answers is given 4 scores. For each individual, the ideal total score for knowledge, from summing up all possible scores to knowledge questions (also included knowledge of conceptual questions), is 116. Obtained scores will be calculated for each participant of the study based on the number of right answers.

Performance questions are dichotomous ones and have probing questions. The number of positive answers to performing certain services is the score for the performance questions for each person. Based on our questionnaire, the ideal score is 12.

## 6.5 DATA COLLECTION

As far as training had been planned to start in October 1999 and the training group was identified in August, the **pre-testing of the intervention group** was possible to carry out and describe in this paper (see later).

For the **pre-test of the control group**, health authorities of the 6 marzes covered by the Project must be contacted on the matter of age distribution of therapists and physicians working in the ambulatories. The aim will be to find controls matched by age and marz (geography). 23 controls will be identified and reached within a 2-week period in September/October by attending either their ambulatories or houses. Controls will be explained the purpose of the study and confidentiality of individual results, then will be given the questionnaire. The questionnaires are supposed to be completed in the private environment under similar conditions with almost no bothering conditions.

The average time needed to complete the questionnaire may be longer than that of the intervention group. The time difference, if any, as compared to that in the intervention group could be attributed to the difference in conditions where the test was taken: in the intervention group, one could have been speeding up in order to keep up with others, while being alone in the control group one will feel no such “pressure”.

The whole questionnaire will be used in the pre-test of intervention and control groups.

The **post-test** is designed to have two phases. The first phase, testing knowledge, is to be applied to the controls and trainees immediately upon completing the 9-month training program by the latter. The setting for trainees’ posttest will be the NIH, the same setting as the pre-test. Controls will be tested at the same time using the same approach as during the pre-test.

The second phase, pertaining to the performance of clinical skills and to the range of services, will be carried out separately from the knowledge testing, after a 4-month practice period following the training program. Within a two-week period, all the study participants will be reached by the evaluator and given the questionnaires to fill in.

According to the description of the two phases of the post-test, the questions related to performance/skills will be withdrawn from the questionnaire while testing the knowledge, then be given separately after 4 months.

## 7. ANALYSIS

### 7.1 TRAINING OUTCOME MEASUREMENT ANALYSIS

After completion of the questionnaires, they will be checked for being appropriately filled in and eligible for analysis, being given an ID number. Those not finished will be rejected. The accepted ones will be scored based on the answer key (Annex 1). The calculated scores for each study-participant will be entered into the Excel sheet and averages for each group calculated. The answers will be entered also into the STATA computer program.

Pre-test data analysis will include comparison of means of intervention and control groups. If there is no significant difference between means of the two, then controls are appropriate and one can conclude that there is no threat to internal validity (see the section 7.3).

The following **indicators** will be used for each objective respectively.

**Indicator for Objective 1a:** the difference of post- and pre-test mean scores for knowledge (including conceptual ones, described in the section **Measuring Instrument**) divided by the expected total for right answers and multiplied by 100%.

**Indicator for Objective 1b:** the difference of mean positive answers for services/skills before and after training divided by expected total of positive answers to skills/services (mentioned in the questionnaire), then multiplied by 100%.

The projected difference for services/skills is set less (30%) than that for knowledge (40%), because not all the skills can be applied during the study period (no need for a certain skill within the specified 4 months). Anyway, misreporting is possible due to the former trainees feeling obliged to give positive answers to that group of questions. These results will be triangulated by

- spot-check observations, which means, that the evaluator will randomly attend the former trainees' ambulatories and observe their activities
- review of medical records. This does not necessarily provide comprehensive or correct answers to specific problems, as the documents may contain errors, omissions, or exaggerations [21]
- cross-check of the information gained from medical records with patients' individual interviews

**Indicator for Objective 2a:** change of knowledge of non-participants is being compared to change of knowledge of participants. The mean change of knowledge of participants will

be calculated by the indicator for the objective 1a. The mean change of knowledge of non-participants will be calculated as follows: the mean score of knowledge for the pre-test of controls will be deducted from the analogous score for the post-test.

It is expected that the difference of means for non-participants in pre- and posttests will not exceed 10%. With the condition that no other historical events/programs will take place, the 10% will be attributed to (i) maturation, (ii) excitement of being included in the survey and searching answers to those questions that they have remembered after the pre-test.

**Indicator for Objective 2b:** the mean change for services/skills in the control group will be compared to the mean change for services/skills in the training group.

Determinants of this increase are following:

- gained skills through the training: knowledge of how to handle equipment, of technique and proficiency
- availability of medical goods and equipment through the PHCD program
- improved image of the doctor after 9 months of training in the World Bank Project and increased confidence of community members, applying for a certain service
- provision of right to perform certain services in the ambulatory instead of referring the patient to the specialists in the regional polyclinic.

All these factors are mentioned in the probing questions, providing several reasons for not performing the service.

Actually, financial considerations also exert their effect on performance [14]. Given some incentives for applying certain medical skills, GPs will be motivated to widen their range of services. Thus, the post-test results pertaining to skills will be affected also by this factor. The latter can not be considered in this paper, because it is under elaboration within the frame of the WB Project.

Analysis of the data will be done using the Excel and statistical package STATA-6.0. For evaluation with pre- and posttest of intervention group, the t-test for paired data will be used, for the second evaluation objective, the t-test for 2 population means, for knowledge and for performance, will be used. The confidence level is 95%, significance is 0.05.

Descriptive analysis will be done also, looking at differences in mean scores by gender and marz within groups<sup>9</sup>, at differences in various rates, and probing questions for reasons, etc. Unfortunately the groups are small and within group distribution of participants by marzes presents small figures that can not be used for significance tests.

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<sup>9</sup> Inter-group analysis based on sex and gender can not be done, because groups have been matched on these variables.

## 7.2 PROCESS OR FORMATIVE EVALUATION OF THE TRAINING

The formative evaluation provides an insight into the process of training and enables to assess the outcome. Because “taken alone, student achievement of course objectives may provide a misleading measure of the effectiveness of a course. The students’ achievements may be despite the teaching, rather than because of it, meaning that poor performance of lecturers may force the students to remedy this by extensive study” [7].

1. Participation of trainees. This is to be measured through periodic checks of attendance. On the one hand, this provides some basis to assess the final results of trainee’s attainment. On the other hand, poor attendance of certain modules by majority of trainees can indirectly evidence the lack of trainer’s skills to make trainees interested in the subject, or irrelevance of the class to the trainees’ needs.
2. Evaluation of trainees by trainers. This will include examination of intellectual (knowledge, problem solving), communication and medical/practical skills. These are the three domains of skills that the trainee needs in further practice [15]. The program evaluator, having access to all these documents, must use the results of quizzes/questionnaires, written tests and examinations, performance-based tests and exams. The curriculum will be consisting of many modules aimed at improving knowledge and developing skills in pediatrics, internal medicine, neurology, psychology, psychiatry, ENT, gynecology, obstetrics, rheumatology, endocrinology, geriatrics, emergency conditions, epidemiology, rehabilitation, organization and management, etc. Hence, in order to assess trainees’ achievements in all these aspects, tests, quizzes, and exams will be carried out by trainers. As mentioned above, student achievement of course objectives may provide a misleading measure of the effectiveness of a course [7]. In this regard, the third approach to be used in the formative evaluation is rather important.
3. Evaluation of trainers by trainees, using self-administered anonymous questionnaires. The external evaluator at the end of each module or section must deliver questionnaires to the trainees then effectively provide feedback to the trainers, as far as “this will be a means of improving faculty skills, though there are still lingering questions about the validity of students’ ratings” [17]. Hence, though frequently providing useful feedback, the results may require cautious interpretation [7].

4. Direct observations of randomly attended class- and practice- hours will provide the program evaluator with an idea of the educational strategies, teaching methods, teaching tools used, and of the organization of training program.

### 7.3 THREATS TO INTERNAL AND EXTERNAL VALIDITY

**Internal validity** enables the evaluator to be confident that a program is effective in a specific experimental instance, while external validity demonstrates that the program's results are applicable to participants in other places and other times. [18].

As far as this evaluation relates to the training program, the intra- and inter-group differences in persons ((learning ability, learning styles, diligence, attitude toward and knowledge of certain modules and clinical skills, being more interested in the acquisition of new skills, etc.) will affect the test results.

The best way of reducing the error due to differences between persons in intervention and control groups is to match them individually. The best matching variables are those that are most highly correlated with posttest scores [19]. In this study controls will be matched with cases by (i) age, which implies certain duration of experience and maturation, as well as "different learning approaches in older vs. young students" [20] and by (ii) marz, i.e geographic area (similar geography providing similar conditions and needs to the groups of doctors, and the distance from the Center -Yerevan, where specialist care is concentrated, which may cause certain bias). Hence, matching will control for differences in study participants on the one hand and maturation in both intervention and control groups on the other hand. Thus, "selection-maturation interaction resulting from different speeds of maturation in different groups" [19] may not be the case in this study.

Threats coming from instrumentation, when effect might be due to a change in the measuring instrument between pre- and posttests, and not to the intervention impact [19], will be ruled out by using the same instrument for pre- and posttests.

The threat that comes from "history" - when an observed effect might be due to an event (other than the training program) which takes place between the pre- and posttests [19] must be controlled by the evaluator and taken into account. This is less likely to take place.

The threat from using the same test is weak, because the time between pre- and posttests is rather long and the questions included in the measuring instrument are many. Thus, remembering and familiarity are not the issue in this study, and positive outcomes will not be attributed to "sensitization of the participants to specific material contained in the prior assessment" [11].

The use of non-randomly selected controls in evaluation contains the possibility of bias from additional sources [18].

- Membership bias may be determined by personal characteristics (described above) of study participants. In this study it is controlled by matching on age (approximate estimation of experience).
- Nonresponse bias may be determined by those refusing to participate in an evaluation study. In this case, those who accept may differ from those who refuse [18]. This must be sought for during interpretation of test results and looking at nonresponse rate.

In order to increase the measuring instrument's (questionnaire) reliability, it must be **piloted** in a group of therapists and pediatricians on the matter of wording, filling in, timing, level of difficulty vs. easiness, skip patterns.

The **external validity** pertains to generalization of cause-effect or intervention results to the subpopulation of rural physicians working in the ambulatories.

Interaction of selection and intervention, i.e. training program, can hardly be an issue, because those included in the intervention group are not selected based on certain personal or intellectual characteristics or performances. They come from rural ambulatories included in the WB Project. In their turn, ambulatories were not selected based on their physicians' personal or intellectual characteristics or performances.

Interaction of setting and intervention is not an issue here, because the next years as well the training will take place in the Chair of Family Medicine and related clinical settings.

If the evaluation detects, that the objectives of the training program are met, the reproduction of the training program at least will be the same as the one tested/implemented, if not refined for the next evaluation.

## **8. PRETEST**

### **8.1 METHODOLOGY OF THE INTERVENTION GROUP PRE-TEST**

The questionnaire was piloted in a group of 6 therapists and pediatricians on the matter of wording, filling in, timing, level of difficulty vs. easiness, skip patterns. The latter were few. Three physicians for the pilot were those from rural ambulatories that happened to visit the MOH at the moment, the other three- from Yerevan polyclinics. The pilot on average took 50 minutes. Based on piloting results, the questionnaire was finally revised and ready for use.

As mentioned above, the intervention group comprises physicians from ambulatories included into the WB supported Health Project covering 6 marzes. By the time the training is over (in 9 months) and physicians return, ambulatories will be rehabilitated and provided with the necessary medical equipment and goods (Annex 3).

Within the frame of the Project the future trainees were invited to the NIH by the PIU to meet with the faculty, get acquainted with the training conditions and terms, and discuss

related issues. After the meeting was over, and all aliens to the evaluation left, trainees were invited by the author to take the test. They listened to the disclosure statement, were explained the objectives of the test and assured of the confidentiality of their personal responses. They were also told how to fill in the questionnaire, and to choose several answers to a question if they found it appropriate. None of them refused to participate though given such an opportunity. Thus, the response rate was 100%. The large auditorium at the NIH provided space enough for 23 respondents not to affect each other's results. The test lasted 55 minutes on an average. It took a little longer probably due to the diligence of respondents trying to go deeper into the questions and to do their best. After the test was over, some of the respondents said that they had so much to learn.

## 8.2 ANALYSIS RESULTS

The training program participants from the six marzes included in the Project are the following: Ararat -10, Tavush -4, Lori -3, Siunik -2, Armavir -2, Vayots Dzor -2. There are 5 (22%) males among 23 trainees. Distribution between therapists and pediatricians is 11 and 12 respectively. The mean age is 36, ranging from 25 to 63.

The mean score for knowledge (including questions related to the concept and characteristics of PHC, quality characteristics of care) is 44 out of an ideal 116, ranging from 23 to 73. Reflected in percentages, the mean score for knowledge is 37.9%, ranging from 20% to 63%.

The knowledge score varies by age, sex, profession and marz.

Females vs. males show the result 45 (38.8%) vs. 40 (34.5%) respectively.

Therapists vs. pediatricians present 46 (39.6%) vs. 42 (36%) respectively.

When divided into two groups of age equal or under 35 year-old vs. above 35 year-old, the following is obtained: the younger the respondents, the higher the average score for knowledge, i.e. 47 (40.5%) vs. 41 (35.3%) respectively. Then the group was divided into more strata shown in **Table 1**.

Age	Absolute mean score	Percent
< or = 30	50	43%
31-35	43.4	37.4%
36-40	34.3	29.6%
= or > 41	45	38.8%

**Table 1.** Results of knowledge scores in different age groups.

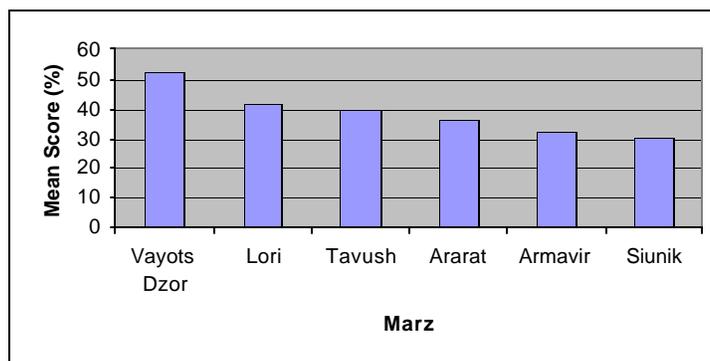
Analysis of mean scores in percentages out of total scores is done by marzes. The results are presented in **Table 2** and plotted in **Fig.1**.

Vayots Dzor has attained the highest scores on knowledge – 52.6%, followed by Lori with 41.4%, then, with a small lag – by Tavush, 39.6. Two marzes closest to Yerevan, Ararat and Armavir, have shown almost similar results, 36% and 32%. The most remote one, Siunik, has the lowest score – 30%.

43.5% of respondents have answered that they do not compile any statistical data to profile the health problems of the patients served.

Marz	Absolute mean score	Percent
Vayots Dzor	61	52.6
Lori	48	41.4
Tavush	46	39.6
Ararat	41.4	35.7
Armavir	37.5	32.3
Siunik	35	30.2

**Table 2.** Results of knowledge scores in different marzes.



**Fig.1** Distribution of mean scores (%) by marzes.

The answers to the question “Approximately what percent of the patients applied to you are sent to other specialists”, are divided as follows: 39% of respondents mentioned 10% of patients, 13% mentioned 20% of patients, 21.4% mentioned 30% of patients, and only one respondent mentioned 40% and another 60% of patients. **Table 3** depicts the responses related to referral.

Reported percentage of referral	Frequency (n=23)	Percent
10	9	39%
15	4	17%
20	3	13%
30	5	21.4%
40 and 60	2	8.6%

**Table 3.** Perceived percent of referral to the specialists.

When looking at the relationship between referral and marz, the following was found out: 5 out of 9 respondents having reported 10% referral rate are from Ararat. The highest rates are also from Ararat (40 and 60%). The average rate for Ararat is 22.5%, for Armavir – 15%, for Lori – 31.5%, for Siunik – 15%, for Tavush – 22.3%, and for Vanadzor – 22.5%.

To the question seeking reasons for referrals there are several probes: out of competence, seriousness of a case, need for diagnostic procedures, unsuccessful treatment. **Table 4** below shows the frequency of reasons respondents have checked.

Reason for referral	Absolute number (n=23)	Percent
Diagnostic procedures needed	21	91.3%
Out of my professional competence	13	56.5%
The case is serious	13	56.5%
Case is getting advanced in spite of treatment	7	30.4%

**Table 4.** What are the reasons for referral? (Multiple-choice question)

The question No5 relates to the number and total duration of postgraduate/continuing training. About 39% of respondents do not mention any training course of continuing medical education. Another 39% mention a single course. **Table 5** below depicts the results to the question regarding number and total months of postgraduate or continuing medical education.

No of training courses	Frequency (n=23)	In %	Total months	Frequency (n=22)	In %
0	9	39.1	0	9	40.9
1	9	39.1	1	2	9.1
2	3	13	2	4	18.2
4	1	4.3	3	3	13.6
6	1	4.3	4	2	9.1
			6	1	4.5
			24	1	4.5

**Table 5.** How many times and months in total you were trained in a postgraduate setting?

When looked at relation of number of training courses and marzes the following is found out. 5 out of 9 who never trained after graduating from the medical university are from Ararat, 4 have been trained once and one- twice. 2 physicians from Lori are above 60 and have been trained twice.

To the open-ended question “What are the features of quality medical care (list at least 5 ones)?” 10 out of 23 mentioned just one characteristic, 5 respondents mentioned two, 4 mentioned 3 characteristics and 4 did not mention anything. Among answers the more frequent ones are compassionate and affectionate treatment of the patient, patience, sympathy, etc. Nevertheless to the question “Do you feel confident and clinically competent to provide quality primary medical care to the general population (whole family)?” 52% responded positively.

The **mean score for performing** procedures mentioned in the questionnaire is 1.7 out of an ideal 12 (e.g. urethral catheterisation, rectal examination, neurological examination, , ECG,

putting stitches, corneal reflex examination, dealing with ingrown toe-nail, etc.), which is 14% of possible. When broken down by number of procedures reportedly performed by each physician of the intervention group the following picture has been obtained: one third of the group does not perform any of the procedures mentioned in the questionnaire. Almost 22% do one out of 12 procedures. Only 13% reportedly perform half of the procedures. **Table 6** below shows the distribution of scores among members of the intervention group.

3 out of 5 comprising the male population of the intervention group are in the subgroup of non-performers. 3 persons reportedly performing 50% of the questioned services are from the marzes Siunik, Lori and Vayots Dzor, which are rather from the Yerevan.

Performance Score No (%)	Absolute No of performers (n=23)	Percent of performers
0 (0)	9	39.1
1 (8)	5	21.7
2 (16)	2	8.7
3 (24)	3	13
4 (33)	1	4.3
6 (50)	3	13

**Table 6.** Distribution of scores for performing certain procedures among 23 trainees.

The following has been found in regard to performing certain procedures.

19 (83%) out of 23 do not perform ECG. 11 of 19 (58%) mention absence of ECG-machine.

But almost all not-performers mentioned lack of skills to handle the equipment or lack of competence to interpret the results. Most of them preferred specialist consultation.

The same proportion exists about putting stitches and dealing with ingrown nail, i.e. non-performers are 19 (83%) for each activity.

No one does abdominal puncture for patients with ascitis. From 73-80% of non-performers mention lack of equipment and of experience. 63-70% have mentioned being not entitled by law to do it. In 43-47% of cases it is lack of knowledge of certain procedure, meaning dealing with ingrown toe-nail and paracentesis for patients with ascitis. Relatively small is the share of feeling uncomfortable, causing more harm than help to the patient with these procedures – 21-26%. Table7 presents the reasons of not-performing these activities. The probing questions are multiple-choice ones and the respondent was free to mention more than one reason.

	Lack of equipment	Lack of experience	Procedure technique	More harm to patient	Against Law	Do not Apply
Stitches	79	79	5	21	63	21
Toe-nail	73.7	79	47.4	21	63	31.6
Ascitis	87	95.6	43.5	26	70	34.7

**Table 7.** Reasons for not-performing activities: putting stitches, dealing with ingrown toe-nail, doing paracentesis in ascitis. Figures are given in percentages out of respective non-performers.

17 (74%) out of 23 do not manage delivery process. Among reasons they mentioned mostly that there was no necessity and because they had never encountered such a situation.

Separate analysis was done to look at the relationship, if any, between a marz and performing a certain procedure, also responses to probing questions for reasons to not doing those procedures. E.g., in **Ararat** marz, one of the closest to Yerevan, 8 respondents out of 10 from the marz answered negatively to performing ECG. Half of them had no ECG machine, 5 (62.%) mentioned that they do not know how to operate it, and 6 (75%) –can not interpret/read the ECG. All 10 physicians from the same marz do not deal with ingrown nail: 5 mentioned lack of equipment, but 7- lack of experience. Only one has mentioned performing urethral catheterization. None examine neurological status of the cranial nerves and checks visual-fields.

Physicians from **Siunik** do neither ECG, nor deal with ingrown nail or put stitches. They have mentioned episodic cases of management of delivery. But reportedly they perform catheterization.

Physicians from **Armavir** have given negative answers related to ECG, nail, stitches, delivery.

The same is true for **Tavush** –no one performs an ECG, 75% do not put stitches, in deal with ingrown nail or with delivery process. Among other reasons the 100% of non-performers from Tavush and Armavir mention lack of experience in providing these services.

None of the intervention group physicians perform rectal examinations, except for the one from **Lori** marz. Only 2 of them (9%) perform a neurological examination and check visual-fields.

78% of the group do not put in a urethral catheter. But 3 out of 5 performers (60%) have given the wrong answer to the probing procedural question.

10 (41%) out of the group do not perform any IV injection. 8 out of these non-performers are from Ararat marz. Two (9%) mentioned 5 injections weekly and one- 10 injections. The others reportedly do 2-4 injections per week.

Chi-square calculated by the Epi-info for all relationships is not valid, because of low numbers in the cells of 2x2 tables, i.e. should not be taken into account to make inferences.

### 8.3 DISCUSSION

The intervention group is not equally distributed by marz and gender. The ratio between males and females is about 1:5. Unfortunately, there is no data in the MOH about true gender ratio of physicians working at the PHC level in the Republic to compare with. The

knowledge and skills/performance figures to be compared to their analogues in the pretest of control group (to check whether appropriate controls were got) and in the post-test of intervention group in order to detect the impact of the training program and make a causal inference ( post-test of control group) are:

- mean score for knowledge, which is equal to 44 out of 116
- mean score for procedures, which is equal to 1.7 out of 12

Breakdown of scores in respect to age subgroups gives difference in knowledge in favor of younger group. The oldest subgroup (above 41) attained the next higher score (Table 1). Since the intervention and control groups are matched by age, the latter can not be analyzed when comparing the two. But a separate analysis within the control group can be done later.

In regard to the knowledge scores analyzed by marz one should mention that the closest (Ararat and Armavir) marzes and the farthest marz, Siunik, had the low est scores (Table 2).

Later meeting, when asked about prevailing low rates of referral to specialists the physicians answered that it was due to the fact that severe cases by-passed them and self-referred themselves to specialist care. The most common reason for referring patients to secondary care is the need for diagnostic procedures. Besides, when looking at reasons for not performing listed procedures, one can also add being not legitimate to that, lack of equipment and of experience. The low referral rates can be mainly explained by a small number of referrals from a small number of patients. More than half of the respondents has mentioned the seriousness of the case for the referral reason.

The question of number/duration of training courses reveals the low level of continuing medical education. More than a third of respondents have never been trained after graduating from the medical institute. To some extent, this question related to recall, but mostly in regards to total duration of training courses. The number of courses is expected to be less biased by recall problems. Not all training courses are mentioned to have taken place at the NIH, in Yerevan. Some of them were organized by Mission East, by UNICEF, Americare- mostly in place, or in marz centers. Two older physicians from Lori mentioned two training courses during their practical work; meanwhile they were supposed to have participated in training courses more than twice. This spreads light on the basic reason for the low frequency of participation in training courses. For many physicians, Yerevan is rather far, and they have to their families and practices for a month or more. In the majority of small rural ambulatories, physicians have no replacement in case of absence. This means, that the

population of those areas would have to get along without basic health services (even though whatever is provided is a relatively small range of services). Besides, the capital is costly, which is unaffordable to them. The other reason for not applying for continuing medical education can be the lack of motivation to upgrade knowledge and skills, because (i) they have been restricted in their rights to provide broad range of services, (ii) more diverse and higher quality services do not imply higher remuneration, and (iii) the lack of basic equipment and goods does not allow physicians apply whatever they are able to do within the scope of their current job description.

Although the question asking about characteristics of quality of care has given an answer limited to patience and sympathy to the patient, more than half of the respondents find themselves clinically competent to provide quality medical care to the family.

The level of performing certain procedures is rather low - 12% out of the mentioned ones.

Several questions, like rectal examination, inserting urethral catheter, checking cranial nerve function and visual fields, probing questions aimed at revealing the correctness of performing these procedures. 22% reportedly insert catheter, but in the probe revealed the wrong technique (Annex 1, questions No72 and 72-1). Thus, the quality of service can be questioned in terms of clinical competence, skillfulness, harm to the patient and negative effects. In regard to other such questions the probes were not well responded, being answered by only a few physicians: 1 mentioned rectal exam, 2 mentioned visual fields and 2 reported neurological exams.

## **9. TIME-TABLE**

The training program starts in October 1999 and ends after 9 months at the end of June 2000. In order to make the evaluation results timely and useful (though a little late) for the MOH and training implementers planning the next year's training, it is planned to start the posttest of controls during June, and of trainees immediately at the end of the June/training, Then waiting for four months to carry out the posttest for performance during November. A short report containing the results and recommendations can be submitted regarding evaluation of knowledge in August 2000, before the final one will be prepared in January 2001. Some of the recommendations from the short report can still be taken into consideration and applied from the middle of the second training program.

The following Gantt chart shows the schedule of each activity till the end of the year 1999, during 2000 and the first month of the year 2001.

Activity	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
1. Instrument design, pilot, changes	█																	
2. Pre-test		█																
3. Data entry and analysis		█	█															
4. Monitoring and process evaluation				█	█	█	█	█	█	█	█							
5. Post-test of knowledge											█							
6. Data entry and analysis												█						
7. Reporting													█					
8. Post-test of performance																█		
9. Data entry and analysis																	█	
10. Reporting																		█

## 10. LOGISTICAL CONSIDERATIONS

### 10.1 BUDGET

1. The PAT (described in the section 10.2), or external evaluator, must be paid a salary during the whole process of formative and outcome evaluation (18 months), except for two months - 9<sup>th</sup> and 10<sup>th</sup>, when she will be waiting till the post-test of performance.  
Two assistants will be needed for 3 months, i.e. 3 times of data collection and entry.
2. Travel expenses will be incurred for 3 months of data collection, when visiting marzes of interest.
3. Communication includes telephone calls to the marz health departments, telegraphs, etc.
4. Printing and copying of materials, questionnaires, reports, etc.
5. Expenditures will be made for office supplies, rent of equipment (if needed) and maintenance, and electricity.
6. Miscellaneous expenses and contingencies are budgeted for.

<b>Budget Line</b>	<b>Unit Price in USD</b>	<b>Number of Units in person months</b>	<b>Subtotal in USD</b>	<b>Total</b>
1. Project staff				
a. PAT salary	600	16	9600	
b. Assistants (2)	400	6	2400	
<b>Subtotal</b> (taxes included)				<b>12 000</b>
2. Travel	500	3		<b>1500</b>
3. Communication				<b>100</b>
4. Printing, copying				<b>150</b>
5. Supplies, equipment				<b>150</b>
6. Miscellaneous				<b>50</b>
<b>TOTAL</b>				<b>13,950</b>

### 10.2 PERSONNEL

The author of this paper is the Project Assistant on the Project's training component (PAT). She will take responsibility for the evaluation, for the following reasons:

- evaluation of the training program refers to the World Bank supported Project
- the Project Implementation Unit (PIU) is in charge of rehabilitation and fully equipping of the Chair of FM at the NIH.

The PAT works in the PIU and is responsible for organization of study tours and training programs abroad for faculty development purposes, arranging technical assistance, elaborating technical specifications for skill-lab procurement, etc.

- Being in close cooperation with the Chairs of FM, the PAT will have an insider’s view of the whole training process, and access to the data for formative evaluation
  - At the same time, the PAT is an external evaluator, being a staff member of the PIU, which provides external viewpoint to the training
  - Timely feedback to the training implementers will be ensured
- For gathering the pre- and posttest data, two assistants will be needed. They will also help in data entry.

## 11. ETHICAL ISSUES

The evaluator must get consent of those meeting inclusion criteria of the study. The disclosure statement (Annex 1) and explanations are to contain many important items. The following table aims at elucidating these items and their role in this study.

Items Pertaining to Ethics and Needing to be Explained	Importance and Implementation			
	Not Applicable	Low	Medium	High
1. Current policy aiming at introduction of FM through the training				✓
2. Importance of developing appropriate training program				✓
3. Aim of the test				✓
4. Responsible agency/organization				✓
5. Role and contribution of each participant in the study				✓
6. Sensitivity and subtlety of the issue			✓ *	
7. Population benefits outweighing the personal moral harm (anxiety or worry) of participating in the study				✓
8. Anonymity of the study			✓ **	
9. Confidentiality of every single questionnaire or any detectable information				✓
10. Participant’s right of autonomy				✓
11. Communication of the final results of evaluation with the participants				✓

\* The subject under questioning is not so sensitive and private. To some extent it can create anxiety and discomfort due to the feeling of being examined and scrutinized.

\*\* Anonymity is not full, and this can be felt by the respondent who is aware that he/she is the only one from a particular market, or when he/she fills in the questionnaire sitting alone in a

room. In this regard, it is important to persuade that the personal data will not be reviewed alone, out of the group context.

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## QUESTIONNAIRE

The Project Implementation Unit of the World Bank supported Armenia Health Project carries out this survey. The aim of it is to assess effectiveness of the newly introduced training program of family medicine and to organize it further in a best way. Your sincere answers will be of great assistance in achieving this aim. As a result of it we will have a better quality of education for all our colleagues.

I would like to assure you that there would be no personal scores disclosed that could seemingly have any adverse effect on you. The results will be considered only in a context of a whole. Anyway, you are free to refuse to participate in the study if you want to. Filling in the questionnaire will take 40-50 minutes. In the case that you feel a question has several right answers, you can tick more than one.

Thank you for your cooperation.

### **General Information**

1. From what Marz are you? \_\_\_\_\_ Your age and sex \_\_\_\_\_
2. How long is your practice experience? \_\_\_\_\_
3. How long have you been working in that ambulatory? \_\_\_\_\_
4. What is your position? \_\_\_\_\_
5. How many times and months in total you were trained in a postgraduate setting? \_\_\_\_\_ / \_\_\_\_\_
6. When have you last had training and where? \_\_\_\_\_
7. How many hours you work per day on an average? \_\_\_\_\_
8. How many patients do you serve per day on an average? \_\_\_\_\_
9. How many home visits do you do per week on an average? \_\_\_\_\_
10. Approximately what is the number of the population you serve? \_\_\_\_\_
11. You take care of the health of (mark the appropriate answer)
  - a. only children
  - b. only adults
  - c. both
12. What are the features of quality medical care (list at least 5)?  
\_\_\_\_\_
13. Do you feel confident and clinically competent to provide quality primary medical care to the general population (whole family)?
  - a. Yes
  - b. No
14. Which are the 4 main functions of PHC?  
\_\_\_\_\_
15. Which 5 unique characteristics of PHC you could you mention?  
\_\_\_\_\_
16. What kind of problems do patients mostly apply to you with (list by frequency)?  
\_\_\_\_\_
17. Approximately what percent of patients who see you are sent to other specialists?  
\_\_\_\_\_
18. What are your reasons for referral? (you can check more than one)
  - a. the "case" is out of my professional competence
  - b. the "case" is serious
  - c. the patient is getting worse in spite of treatment
  - d. diagnostic procedure is needed
  - e. else describe. \_\_\_\_\_
19. **Are statistics compiled to profile the health problems of the patients served by you?**
  - a. Yes
  - b. No
20. **Family planning must be taken care of by**
  - a. women health center, i.e. gynecologist/obstetrician
  - b. family doctor

21. Rural therapists or pediatricians are family doctors.

- a. True
- b. False

Clinical knowledge questions

22. Hemoptysis may be observed in patients with [\(bcdf\)](#)

- a. asthmatic bronchitis
- b. bronchiectases accompanied with secondary bronchitis
- c. atrophic proximal bronchitis
- d. chronic bronchitis accompanied with secondary bronchiectases
- e. chronic obstructive bronchitis with advanced emphysema
- f. congestive bronchitis with heart insufficiency

23. Sulfonamide of prolonged action is given to patients with acute condition of chronic bronchitis. The medication must be administered [\(ae\)](#)

- a. on an empty stomach
- b. during eating
- c. after eating
- d. with small amount of liquid
- e. with 1-2 glasses of liquid

24. Aspirin asthma is characterized by [\(acd\)](#)

- a. nasal poliposis
- b. mild bronchial asthma
- c. severe bronchial asthma
- d. intolerance to yellow additive Tartrazine
- e. sensitization to indoor dust

25. All of the three microbes causing pneumonia – pneumococcus, legionelle, and mycoplasm, are sensitive to [\(e\)](#)

- a. gentamycine
- b. laevomyetine
- c. metacycline
- d. ampiox
- e. erithromycine

26. Allergen for "farmer's heart" is [\(c\)](#)

- a. pollen
- b. dust
- c. Actinomyces
- d. tick's allergens
- e. Legionella
- f. Candidae

27. The following is characteristic of Pancoast's lung cancer: [\(bdeg\)](#)

- a. quick development of metastases
- b. symptoms of plexitis
- c. localization in tongue segments
- d. Horner's syndrome (myosis, ptosis, enophthalm)
- e. localization in upper segments
- f. symptoms of Superior V.Cava compression
- g. destruction of cervical and thoracic vertebrae

28. More frequent symptoms of Carotid sinus hypersensitivity syndrome: [\(ace\)](#)

- a. hypotension
- b. hypertension
- c. bradycardia
- d. sinus tachycardia
- e. presyncopal and syncopal conditions

29. Achalasia of esophagus is featured by (ace) |
- dysphagia on swallowing solid and liquid food
  - dysphagia only on swallowing solid food
  - food regurgitation when emotionally tense, at night
  - food regurgitation when bending, also when lying horizontally after taking food
  - nocturnal cough, frequent aspiration pneumonia
30. Favoring(?) factor(s) for reflux-esophagitis is(are) (abcd) |
- hernia of diaphragm's esophageal hiatus
  - obesity
  - gravidity
  - alcohol, smoking
  - Cerukal use
31. Antacids are reasonable to be taken by patient with duodenal ulcer (b) |
- 1 hour following food intake
  - 1 hour before food intake and at night
  - during eating
  - individually, before expected pain and at night
32. Most typical localization of pathological process of Crohn's disease (e) |
- peri-anal region
  - transverse colon
  - esophagus
  - stomach
  - terminal part of the ileum
33. Manifestation(s) of colon neoplasms (ab) |
- hypochrom anemia
  - intestinal obstruction
  - oedema
  - hyperemia (redness of the skin) due to excess production of serotonin
  - prolonged diarrhea
34. Hemolytic jaundice symptoms (acdef) |
- temperature
  - liver tenderness on palpation
  - splenomegaly
  - unchanged fecal color
  - bilirubinemia (indirect reaction)
  - anemia
35. Hematuria is the featured symptom of (abe) |
- renal cancer
  - urolithiasis
  - chronic pyelonephritis
  - renal amyloidosis
  - acute streptococcal nephritis
36. Factors for anemia of patients with chronic renal insufficiency are (abc) |
- decreased production of erythropoietins
  - hemolysis
  - iron deficiency
37. Triad of symptoms susceptible for renal neoplasm (c) |
- fever, cachexia, erythrocytosis
  - cachexia, anemia, persistent macro-hematuria
  - pain, palpable mass, transient macro-hematuria
  - pyuria, macro-hematuria, pain
  - pain, anemia, dysuria

38. Balanoposthitis is a complication of (a)
- phimosis
  - prostatitis
  - cystitis
  - urethral stricture
  - paraproctitis
39. 30-year old patient suffering with diabetes mellitus I, was found in coma 3 hours after insulin injection. What is to be done first? (e)
- ECG
  - infusion of 5% glucose
  - injection of insulin (10-20Un)
  - check serum glucose, electrolytes, creatinine
  - infusion of 20ml 40% glucose
40. Hematogenic osteomyelitis is more frequent in (a)
- adolescent boys
  - pregnant women
  - elderly
  - adults
41. Clinical picture of botulism features (cd)
- dehydration syndrome
  - hyperthermia
  - myasthenia
  - bulbar disturbances
  - hemorrhagic syndrome
42. Herpes zoster can include/affect (abce)
- brain membranes
  - skin
  - lungs
  - intestines
  - eyes
43. HIV-specific skin lesions include (bcde)
- vitiligo
  - remitting herpes zoster
  - candidamycosis of skin and serous membranes
  - papillomatosis
  - Kaposi's sarcoma
44. Mantoux skin test is being used for (abcd)
- choosing BCG revaccination contingent
  - early detection of TB in children and adolescents
  - identification of being infected by MTB
  - TB dynamics upon treatment
45. Patient with first-time seizures must be checked for (abcd)
- brain tumor
  - brain abscess
  - meningencephalitis
  - sub-arachnoid hemorrhage
46. Of diseases of the first half of pregnancy with high probability of causing congenital anomalies is/are (c)
- alcohol intoxication
  - neurasthenia
  - rubella
  - viral hepatitis
47. Congenital syphilis can cause abortion at (bc)
- 1<sup>st</sup> trimester of pregnancy
  - 2<sup>nd</sup> trimester of pregnancy
  - 3<sup>rd</sup> trimester of pregnancy

48. The most characteristic symptom of allergic conjunctivitis [\(b\)](#) |
- painful eyes
  - itching
  - sensation of foreign body present in the eye
  - photophobia
  - hemorrhage into conjunctiva
49. Local use of \_\_\_\_ is contraindicated at patients with corneal ulcer [\(c\)](#) |
- atropin
  - homatropin
  - steroids
  - scopolaminum
  - iodine
50. Paralysis of 3<sup>rd</sup> cranial nerve causes [\(abcde\)](#) |
- ptosis
  - lack of eyeball movement up, down, inside
  - divergent squint
  - enlarged stable pupilla
  - accommodation paralysis
51. Characterizing lesion(s) of oral serous membrane in acute leukemia is/are [\(acd\)](#) |
- hemorrhages on the membrane
  - lichen ruber planus
  - ulcerative stomatitis
  - infiltrates in gums
52. During development of diabetic ketoacidosis patient can complain of [\(abcd\)](#) |
- abdominal pain
  - thirst
  - nausea, vomiting
  - dyspnea
53. Quincke's edema can be localized in [\(abcd\)](#) |
- face
  - esophagus
  - gastric-intestinal mucous membrane
  - genitals
54. Contraindication(s) for administering steroids in asthmatic status [\(d\)](#) |
- intensive obesity
  - diabetes mellitus
  - symptoms of active respiratory infection
  - all mentioned above is wrong
55. Which of these statements is/are true for spontaneous pneumothorax [\(ad\)](#) |
- often is a result of a rupture of sub- pleural bullae
  - more often happens in women than men
  - accompanied with hemoptysis, as a rule
  - accompanied with chest pain
  - bronchial respiration auscultated on the side of the lesion
56. What conditions are accompanied with hypertension in pulmonary artery [\(abc\)](#) |
- thrombembolism of pulmonary artery
  - mitral stenosis
  - bronchial asthma attack
  - infarction of right ventricle
57. Hyper-calcemia is featured by [\(bde\)](#) |
- cramps/seizures
  - polyuria
  - unconsciousness
  - shortened interval QT on ECG
  - muscle weakness

58. While using diazepam for coping with epileptic status the following can happen ([abd](#)) |
- respiratory failure
  - hypotension
  - increase of body temperature
  - bradycardia
  - polyuria
59. Ethyl spirit is indicated as antidote to poisoning with ([d](#)) |
- dichlorethan
  - nitric acid
  - acetic acid
  - methanol
60. Neonatal period is up to ([d](#)) |
- 7 days
  - 14 days
  - 21 days
  - 28 days
  - 40 days
61. Hemorrhagic disease of the newborn is due to ([c](#)) |
- vit. B12 deficit
  - Ca deficit
  - vit. K deficit
  - thrombocytopenia
62. At what age does child concentrate/hear voices? ([c](#)) |
- 3-5 days of life
  - 1 week of life
  - 2 weeks
  - 3 weeks
63. Average number of heart beats of children of preschool age ([b](#)) |
- 65-75 per minute
  - 85-95 per minute
  - 105-115 per minute
  - 125-135 per minute
64. Absence of arterial hypertension crises excludes the possibility of having pheochromocytoma ([b](#)) |
- True
  - False
65. 72-year old patient with superficial burn of 15% of body-surface is considered by the EMS doctor as severe case. ([a](#)) |
- True
  - False
- The following questions relate to your clinical and communication skills.**
66. How long it take you to examine a patient you see once a year or for the first time ([c](#)) |
- 10 min.
  - 15 min.
  - 20 min.
  - 30 min.
  - 40 min.
67. What 3 main questions will you ask a patient to check for Alzheimer disease?  
[\(Who are you? Where do you live? What year is this?\)](#) |
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
68. What common test will you use to check patient's intellectual capacity?  
[\(To deduct from 100 with the step 7, if fails, th en 3\)](#) |
- \_\_\_\_\_
69. During patient examination do you check the function of 12 cranial nerves? \_\_\_\_\_

70. Do you check for the corneal reflex? \_\_\_\_\_ 70-1. How do you check it?  
\_\_\_\_\_
71. Do you check visual fields? \_\_\_\_\_ 71-1. How do you check it?  
\_\_\_\_\_
72. Do you insert a urethral catheter? \_\_\_\_\_
- 72-1 You expose the catheter to ----- before you use it (d)
- ethyl spirit
  - furacyllinum
  - antibiotic
  - glycerine
  - powder/talc
73. Do you do rectal examination of every patient? \_\_\_\_\_  
73-1 Describe in a few words patient's posture.  
\_\_\_\_\_  
\_\_\_\_\_
74. In an average week how many intravenous injections/drips do you personally do? \_\_\_\_\_
75. Do you perform an ECG when needed?
- Yes (then go to #77)
  - No
76. You do not perform ECG because
- have no ECG machine
  - do not know how to handle ECG machine
  - can not read and interpret the results
  - patients do not apply with obvious complaints they would attribute to heart attack because they know you will not do it
  - Other, please specify \_\_\_\_\_
77. Do you put stitches when needed?
- Yes (then go to #79)
  - No
78. You do not put stitches because
- have no appropriate surgical equipment
  - do not have experience
  - do not know how to do it
  - afraid of causing more harm than help
  - have no right to do it
  - patients do not come to you
  - Other, please specify \_\_\_\_\_
79. Do you deal with ingrown toe nail?
- Yes (then go to #81)
  - No
80. You do not deal with ingrown toe nail because
- have no appropriate surgical equipment
  - do not have experience
  - do not know when and how to do it
  - afraid of causing more harm than help
  - have no right to do it
  - patients do not come to you with that problem
  - Other, please specify \_\_\_\_\_
81. Do you perform abdominal puncture for patients with ascitis?
- Yes (then go to #83)
  - No

82. You do not perform abdominal puncture because
- a. have no appropriate equipment
  - b. do not have experience
  - c. do not know how to do it
  - d. afraid of causing more harm than help
  - e. have no right to do it
  - f. patients do not come to you for it
  - g. Other, please specify \_\_\_\_\_
83. Do you guide the delivery of pregnant women with normal pregnancy when needed?
- a. Yes (then go to #85)
  - b. No
84. You refer delivering woman (with normal pregnancy) to the specialist because
- a. have no appropriate equipment
  - b. do not have experience
  - c. do not know how to do it
  - d. afraid of causing more harm than help
  - e. have no right to do it
  - f. patients do not come to you for it
  - g. Other, please specify \_\_\_\_\_
85. Is any laboratory test performed in your ambulatory?
- a. Yes (then go to #86)
  - b. No
86. Do you perform it by yourself?
- a. Yes. Please specify the test \_\_\_\_\_
  - b. No, **because** you
87. a. have no appropriate equipment and laboratory supplies
- b. do not have experience
  - c. do not know how to do it
  - d. afraid of making a mistake
  - e. have no right to do it
  - f. patients do not come to you for it
  - g. Other, please specify \_\_\_\_\_

**THANK YOU FOR YOUR PATIENCE AND COOPERATION**

# **PRIMARY HEALTH CARE REFORM STRATEGY IN THE REPUBLIC OF ARMENIA**

*(Translation from the official Armenian Document)*

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## 1. The Concept of Primary Health Care (PHC)

### 1.1 The definition of PHC

The development of a PHC strategy, within the context of health care system reforms in the Republic of Armenia (RA), is based on the PHC concept adopted at the Alma-Ata conference in 1978.

According to the WHO definition, “ Primary Health Care is the main part of health care, based on scientific, practical methods accessible for the population, and is implemented at a cost the country and community can afford. PHC is the central function of the State Health Care System, the principal vehicle for the delivery of health care, the most peripheral level in a health system stretching from the periphery to the center, and an integral part of the social and economic development of a country “ (1994 Copenhagen, WHO Glossary ).

In the RA, PHC, as “the first contact point between a person/family and the health care system, is the basis for the health care system and an integral part of it, aiming to satisfy the main medical-social needs of the population using a limited amount of simple and inexpensive medical technologies, with an emphasis on preventive activities; special attention is focused on accessibility and equity, integration of services, participation of the community and intersectoral coordination.”

### 1.2. The Tasks of PHC

- Promotion of health
- Prevention of disease
- Treatment of disease
- Rehabilitation

### 1.3. The Main Principles of PHC Implementation

#### **ACCESSIBILITY**

*Geographic, time, psycho-social and financial; evaluation of accessibility is based on public opinion.*

#### **EQUITY**

*It is impossible to attain equality in health status for everybody. It is, however, necessary to provide equal opportunity for all individuals to realize their full health potential.*

#### **COMPREHENSIVENESS**

*The broad range of services offered satisfies the main health care needs of the population (although the final solution to any given health care problem may not be realized at the PHC level).*

#### **CONTINUITY**

*PHC addresses not the treatment of a special case, but the whole range of health care issues arising during an individual's lifetime.*

#### **COORDINATION**

*The majority of health care issues faced by an individual are addressed at the PHC level. The individual, however, can receive additional specialized medical care, coordinated through his/her family doctor. Centralized patient files would ensure an efficient coordination process.*

## 2. PHC in the Armenian Context

The primary reason for health care reform in the RA is the fact that PHC, although present, has many shortcomings at the organizational level. These include:

⇒ an insufficient level of preventive measures;

- ⇒ the low level of authority of the district therapist, and his/her passive role as a “dispatcher”/controller (In the past, emphasis was placed on specialized and hospital services. In order to ensure maximum occupancy rates for hospital beds, the district therapist was persuaded to refer patients to in-patient care and testing. As a result, the district therapist was deprived of his/her main function of providing patients with services);
- ⇒ lack of consideration of the family as a unit with regards to health care provision, resulting in a separation of therapeutic, pediatric and obstetrical-gynecological services;
- ⇒ the absence of financial incentives to develop activities; and
- ⇒ insufficient capacity building.

As a result, the system is inefficient, and the quality of services is insufficient. Health indicators in the RA are currently lower than international standards.

The need for PHC reform is obvious. The main goal of this reform is to improve the health of the population, through :

- ⇒ the provision of high quality health care;
- ⇒ the organization of more effective and efficient health services;
- ⇒ greater emphasis on health promotion and preventive measures;
- ⇒ a partial shift of the health care burden from the hospitals to the PHC units, i.e. from more expensive to more cost-effective medical care;
- ⇒ increased accessibility of medical care by the introduction of a “family medicine” approach;
- ⇒ a "gate keeper" role for the family doctor;
- ⇒ financial motivations for doctors to provide a better service;
- ⇒ continuous examination and follow-up of the patient;
- ⇒ coordination between the PHC providers' services and secondary health care services.

### **3. Services that will be Provided by the Armenian PHC Team**

- Health education
- Maternal and child health care programs, including immunization and family planning
- Prevention and control of endemic diseases
- Identification of the social, environmental, demographic, and psychological risk factors for disease, and development of preventive measures directed towards health promotion for the population
- Diagnosis, treatment and rehabilitation for health care problems
- Medical assistance in emergency situations
- Social services

### **4. Providers of PHC in Armenian**

The PHC medical services in Armenia will be provided by the PHC team. During the transition period the PHC team will consist of the following providers: family doctor/general practitioner, general practice pediatrician, general practice nurse, midwife. In the future, in connection with the development of the social and economic conditions of the Republic, the team members can be reviewed and changed.

## 5. Organization and Management of the PHC Sector in the Health Care System

### 5.1 The types of ownership

Medical facilities providing primary health care services will be owned by *hamainks* (communities). At present these facilities belong to *marzes* (regions) and will be transferred to *hamainks* when the State Health Agency (SHA) begins to function. Transfer of PHC facilities to *hamaink* ownership will be carried out gradually. Priority will be given to *hamainks* that will invest in the development of these facilities. Several *hamainks* can join together to own a single PHC facility. In this case, the same team of family doctors will provide services addressing the health needs of the entire population in the associated *hamainks*.

*Hamaink* ownership of PHC facilities will stimulate *hamaink* participation in both facility-related activities, and the refurbishing and renovation of the PHC facilities.

Family doctor services can also be provided on a private basis.

### 5.2 Responsibilities at the National, Marz and Hamaink Levels

#### National level (Ministry of Health)

- Formulate and implement health care policy.
- Design drafts of legislative and regulatory acts for the main health tasks.
- Define health priorities based on health survey data.
- Within the scope of health priorities, design the Basic Benefits Package (BBP) including the plan for its implementation and monitoring.
- Prepare a health care budget according to the BBP.
- Define health care standards and monitoring.
- Provide the authorized bodies at the *marz* and *hamaink* levels with guidelines, according to adopted health policy.
- Store health care strategic resources for emergency situations.
- Develop and introduce methodology for the collection of health statistics and accountability.
- Organize a health information system.
- Organize licensing for health care providers.
- Implement control measures aimed at ensuring the hygienic-epidemiological safety standards for State programs, and the quality of medical aid and services, independent of type of ownership and juridical structure.

#### Marz level :

- Organize the activities of health care facilities at the *marz* level.
- Monitor non-governmental providers' activities.
- Ensure the implementation of the national health care program at the *marz* level.
- Collect and analyze statistical information from medical aid and service providers at the *marz* and *hamaink* levels, independent of the type of ownership; present the information to the Ministry of Health.
- Identify the health needs of the *marz*, approve tasks and, if necessary, present proposals to the Ministry of Health for further action.
- Coordinate inter-*hamaink* health care activities.
- Organize and implement hygienic and epidemiological measures to prevent transmitted and non-transmitted diseases and poisoning.
- Provide support to the national hygienic and epidemiological providers in water control, food and environmental safety, and sanitation of schools and other buildings.
- Organize the construction, maintenance and utilization of facilities at the *marz* level.

#### Hamaink level :

- Organize activities of the health care facility at the *hamaink* level.
- Define and assess the health care needs of the *hamaink*.
- Provide the *marz* information-analytical center with health care data from medical aid and service providers, in the framework of the PHC programs.
- Develop and implement *hamaink* health care programs and time schedule according to adopted standards.
- Prepare the *hamaink* health care budget.
- Ensure the implementation of national and *hamaink* health care programs.
- Support the provision of hygienic-epidemiological measures.
- Organize the construction, maintenance and utilization of facilities at the *hamaink* level.

### 5.3 The Active Participation of the Community in the Organization of PHC

Community members are not only the consumers of PHC services, but can also be active participants in its organization, implementation and monitoring in the following ways: consultation with program users; control of results; participation of users in service provision; development of proposals for improving the health of different social groups (elderly people, socially vulnerable groups, chronically ill patients, etc.) based on needs assessment survey data.

There is some uncertainty regarding the regulations and management structure at the *hamaink* level. Consequently, the active participation of community members in PHC is not yet clear.

### 5.4 Financing of PHC

The PHC providers' team will contract with the SHA according to which services will be provided within the framework of the BBP. The SHA will implement quality assurance monitoring for the services provided. Payment for these services will be carried out according to the principle of capitation.

In facilities which meet certain criteria, the family doctor, along with his/her team, will provide PHC services directed towards the promotion of health and treatment of diseases for the population. Concurrently, the family doctor will act as the financial and logistic manager of the team. All members of each team should act within the same administrative managerial unit.

In urban areas, former polyclinics can be used as family doctors' offices. Each polyclinic will be allocated some family doctor teams, and provide these teams with appropriate laboratory, diagnostic, X-ray and other services in common facilities. The logistics of the teams' activities will be the responsibility of the manager, who will be appointed by the owner of each PHC facility. The manager will also contract with the SHA regarding services implemented by teams within the framework of the State Order. Team members will be paid via contracts with the manager from the sources allocated for them by the Government. The manager will be accountable to a council for his/her activities. The council will be made up of family doctors.

PHC teams will be given the opportunity to work independent from the polyclinics and establish private offices.

In rural areas, family doctors' teams will be located mainly at ambulatory clinics. The family doctor will be the manager of the team. The team will contract directly with the *marz* branch of the SHA.

Diagnostic laboratories and medical specialists will be paid for services according to separate contracts with the SHA based on reports from family doctor's team members.

For services outside the National Health Care System, the patient will pay himself, on the basis of a fee-for-service system.

## 6. Reform of the PHC System

### 6.1 PHC Providers - Present Infrastructure

There is a high number of potential PHC providers in all *marz* areas of the RA. In urban areas they are mainly employed at polyclinics, based on district (or territorial) health services provision. These providers are separate for adults and children. In addition to the therapist and pediatrician, the polyclinic staff is comprised of doctors of various specialties (cardiologists, neurologists, surgeons, etc.).

In rural areas PHC providers are employed at Rural Health Centers (RHC) and Feldsher Obstetrical Units (FOU) . These facilities serve as separate stages of health provision for the rural inhabitants. FOU's are more peripheral establishments, and employ feldshers (medical personnel with a four-year education from special medical colleges) and a midwife. The RHC is the main medical establishment in the rural area which, according to legislation, should have four doctors (therapist, pediatrician, obstetrician-gynecologist and dentist). In addition to these establishments, the rural population can also use the wide range of services provided by the local hospitals, which have a capacity of approximately 25-30 beds.

RHCs, according to Governmental decision, have State Enterprise Status. This status allows the RHC the opportunity to carry out activities which will build a foundation of necessary financial resources that may result in a more efficient and rational implementation of medical activities.

The distribution of doctors in the RA is unequal.

## 6.2 Transition Activities

6.2.1 Health care, social welfare and other relevant services will be reoriented in order to obtain maximum fulfillment from the activities of the family doctor. These activities will be directed towards solving the health problems of the family through community health promotion, disease prevention and treatment, rehabilitation and social assistance.

6.2.2 New approaches will be developed for the selection and distribution of health care providers. By optimizing the system, resources will become available that can be used for strengthening the PHC system according to need and demand. This process will also involve training programs in family practice medicine designed for doctors from different specialties to become family doctors. Additionally, PHC facilities will be provided with essential drugs, diagnostic and other necessary equipment.

To ensure the efficiency of PHC activities, it is necessary to work out a rationalization plan for the units that provide services (for example, the establishment of PHC facilities where needed; in the case of underutilized rural district hospitals, to reconstruct them into out-patient facilities or to join them to the *marz* hospitals).

In the future, it is planned to transform a certain number of FOU's into offices for family doctors. The remaining FOU's will be preserved, staffed by one public nurse. They will be responsible for answering health-related questions from the population of the *hamainks* and accountable to the family doctor. FOU's will provide some team services, ensuring a greater accessibility to services for the population of each *hamaink*. The staff of FOU's will be paid from the budget allocated for *hamaink* health care. *Hamainks* will also participate in ensuring the ongoing activities of FOU's.

6.2.3 With the aim of utilizing the limited national resources for medical assistance in a more effective and equitable way, these resources will be pooled together to finance the minimal Basic Benefits Package (BBP), which will be provided free of charge to the entire population in the RA.

The basis for the BBP will be the burden of disease in the RA, and the cost-effectiveness of the interventions.

6.2.4 A rational system for estimating and evaluating the economic cost of the health care system will be developed and implemented. The aim of the system will be to set up a direct link between the PHC providers' reimbursement and indicators of consumers' health.

6.2.5 PHC providers will be given training, re-training and continuous education.

6.2.6 An increase in burden of responsibility will be placed on the person, family and community for their own health.

6.2.7 Standards will be developed for PHC services.

6.2.8 Standards will be developed for the physical infrastructure of PHC units.

6.2.9 A stage-by-stage implementation plan for the introduction of family practice will be followed (see Annex).

Taking into account the variety in PHC infrastructure present in different *marzes*, it is obvious that introduction of family practice in each *marz* should be implemented in the most optimal way for the particular situation. Nevertheless, a number of common organizational aspects can be identified.

- Certain medical services currently provided by different specialists can be delegated to the family doctor. The specialists will be limited to the consultation and treatment of patients who need very specialized care due to complicated pathology or chronic diseases. This will result in a reduction of specialists at the primary level and, consequently, will free resources.
- Certain medical activities (preventive, out-patient, patient follow-up) that are currently performed by doctors can be delegated to medical mid-level staff who have received special professional education and are eligible to work independently in providing these medical services. This will result in a decreased demand for physician services. The ratio of doctors to mid-level personnel in the RA is 1:2.5, though 1:4 is considered to be more optimal.
- Family doctors and general practice pediatricians are the only doctors who will have complete responsibility for the promotion of the patient's health.
- The *hamaink* will be responsible for providing the conditions necessary for the implementation of PHC services. *Hamaink* authorities will ensure the planning and organization of PHC activities in their district through the officials responsible for health care.
- Although family doctors can be located in any medical institution, polyclinics (in urban areas) and RHCs (in rural areas) are considered to be a more appropriate choice. In the near future family doctors may also be practicing at private facilities.

## **7. Integration of vertical programs**

At present, several vertical programs (diarrhea, respiratory diseases, tuberculosis program, etc.) are implemented concurrently with PHC at all levels of the health care system. The majority of these vertical program activities will be transferred to family practice. Several sanitary-epidemiological programs will remain as vertical programs.

### Strategy for the Introduction of Family Practice

**Short-term strategy** (Jan 1997 - Dec 1997); This time period is the preparation stage. Activities will include the following:

- development of an organizational-legislative base for the transition to family doctor practice;
- extended analysis of PHC services in the RA health care system; detailing a precise program for the transition to family medicine; development of the mechanisms for management and capacity building at each *marz*;
- selection of PHC providers to work in the sphere of family practice; organization of their training and re-training;
- preparation of training programs ;
- improvement of programs in family practice training, increased information, and other activities for the purpose of ensuring the authority of the family doctor;
- provision of information on reforms to raise awareness among medical staff and the population;
- development of incentives for PHC providers, especially in rural areas;
- development of a computerized information system network for family doctors;
- development of mechanisms for the introduction of the next 2 stages.

**Mid-term strategy** (1998 - 2000) This is the transition stage towards the introduction of family practice. The main goal of this stage is the transition of district therapeutic and pediatric services to the corresponding family practice services.

Structural and functional changes will occur at this stage. In addition, PHC teams will be recruited within the limits of existing possibilities.

Increase in the authority of family doctors will be achieved through an increase of salary and responsibility, and through the provision of adequate medical supplies and equipment, premises.

Individuals will be give a choice in the selection of PHC providers (family doctor with his/her team). If necessary, a consultation with an obstetrician-gynecologist and other specialists, or in-patient treatment will be provided. It will be essential that a patient be referred by a family doctor for consultations with specialists.

The activities of the PHC team will be implemented in polyclinics (for urban areas) and health centers or rural hospitals (for rural areas). In order to achieve this, and also to ensure family doctor, specialist-consultant, diagnostic and rehabilitation services, necessary changes in management structure and organization will be made.

*Thus, the final results of this stage are :*

1. The development of the principles of PHC organization at each *marz*.
2. The development of regulations which reflect PHC providers' (family doctor, general practice pediatrician, general practice nurse, midwife and other providers') rights and responsibilities.

3. The development of procedures and methodology to ensure links between PHC and other providers' medical and social assistance.
4. The development of procedures and methodology for the conduct of daily activities and quality assurance monitoring.

**Long-term strategy** (2000 - ) This is the final transition stage for the introduction of family practice. The aim of this stage is the further development of family practice medicine and the final transition into family-oriented PHC.

FAMILY PHYSICIAN STATEMENT  
(Subject to Amendments)

1. General Statement

- 1.1 A Family Physician (FP) is a multi-profile specialist who has the right to provide medical-social care to family irrespective of its members age, sex, religion and ethnicity
- 1.2 FP provides services related to prevention, diagnostics, treatment and rehabilitation, based on knowledge of patient's medical history, family, vocational and social aspects.
- 1.3 To the position of FP can be appointed a specialist that has been trained and licensed in accordance with Qualification Characteristics of FP.
  - 1.3.1 Basic education of FP and first specialization is provided at the State Medical University (SMU) and other licensed medical school.
  - 1.3.2 Retraining of medical doctors and pediatricians into FPs is provided by the National Institute of Health (NIH) or other licensed medical postgraduate training institution.
- 1.4 The FP provides primary health care individually, as well as in a group of other FPs, and also in a team practice (with other specialists: pediatrician, gynecologist, dentist, etc.)
- 1.5 The FP practices in health institutions irrespective to their statute and also can act privately within the frame of applicable law.
- 1.6 The Family physician (or group of FP) is eligible to sign Contracts with state, marz/municipal authorities, communities, medical insurance companies and other health institutions.
- 1.7 The catchment population of FP compiles both based on the territorial and recruitment principles, according to the MOH regulations regarding FP's activities.
- 1.8 The FP implements ambulatory services, home visits, EMS, prevention, diagnostics, treatment and rehabilitation. He/she participates in the settlement of some social problems of a family.
- 1.9 FP is guided by this statement and applicable rules and regulations in force in the Republic of Armenia.
- 1.10 Professional activities of the FP are supervised according to procedure established by the MOH, together with MOH and local health authorities.
- 1.11 Appointment or resignation of FP is performed in accordance with legislation and terms of the contract.
- 1.12 FP must know the national legislation related to the population health, know the infrastructure of the system, professional competence, rights and responsibilities.
- 1.13 He/she must be able to plan the work, carry out public health analysis, cooperate with other specialists and services.
- 1.14 FP is required to follow the rules of medical ethics and deontology.
- 1.15 The FP is responsible for decisions made by himself in the frame of one's competence. FP takes responsibility for illegal operations or non provision of required ones resulting in harm or death of a patient.

2. Responsibilities of the Family Physician

The main requirement of FP's is to provide primary health care (primary medical-social care) for the population in accordance with the terms of Qualification Characteristics and License he/she has.

- 2.1 Population Health assessment and monitoring.
- 2.2 Population health education and promotion
- 2.3 Health prevention: including early identification of risk factors and diseases
- 2.4 Within the frame of specialty competence provision of planned, emergency and urgent medical services.
- 2.5 Ensurance of timely provision of sub-specialty services.
- 2.6 Ensurance of timely hospitalization when so required

- 2.7 To provide rehabilitative care
- 2.8 To provide testing of temporary disability in patients, according to the regulations of Republic of Armenia
- 2.9 Organization of medical and social care for elderly, disabled people, patients with chronic and non-curable diseases, with the assistance of social security service and charity organizations
- 2.10 Assistance and medical consultation to family members, including:
  - immunizations
  - pre- and perinatal care
  - dynamic control over the nutrition, growth and development of children of all ages
  - dynamic control over the health of adolescents
  - family planning
  - consultancy on psychological and sexual issues
  - control over woman health
- 2.11 Reporting and completing registration forms and filing to health authorities

### 3. Rights of Family Physician

FP has the rights to:

- 3.1 Carry out medical activities according to this statement and the license
- 3.2 supervise work of middle and low level personnel
- 3.3 Based on the property or full operating rights to procure, maintain, use or delegate others to use ambulatory equipment, in accordance with the terms of the contract
- 3.4 contract with different organizations, enterprises, state, and private insurance companies to provide medical services
- 3.5 make proposals aimed at improvement of medical-social issues
- 3.6 participate in conferences, training and workshops dealing with issues of curative-preventive care
- 3.7 assess quality of medical care delivered to one's patients by other specialists
- 3.8 To charge or respond to claims at courts

### 4. Family Physician Specialty Requirements

FP must be proficient in performing the following types of activities and related issues:

- prevention, diagnosis, treatment and rehabilitation of most prevalent diseases within the frame of his/her competence
- emergency medical care
- provision of medical procedures
- organizational activities

#### 4.1 Prevention, diagnosis, treatment and rehabilitation of most prevalent diseases

FP must be able to perform on his own:

- master the methods of health promotion
- to observe patients and assess findings of physical examination
- to plan clinical and laboratory examination
- to interpret the results of tests of blood, urine, sputum, gastric juice, duodenum, stool, spinal liquor; as well as results of X-ray, electro-physiological and other examinations
- to have a good command of the methods of prevention, diagnosis, treatment and rehabilitation of most prevalent diseases
- to organize auxiliary examinations, consultations and hospitalization when necessary; organize continuous treatment and follow-up of patients with following diseases:

##### 4.1.1. Respiratory system diseases

Acute respiratory disease

Bronchitis

Bronchiolitis  
Bronchiectasis diseases  
Bronchial asthma  
Pneumonia  
Alveolitis  
Pulmonary abscess and gangrene  
Pulmonary malignant tumors  
Diseases of pleura  
Pneumothorax  
Congenital defects of respiratory system  
Occupational diseases of respiratory system  
Pneumosclerosis  
Pulmonary insufficiency  
Pulmo-cardial insufficiency

#### 4.1.2. Coronary heart diseases

Essential hypertension and symptomatic hypertension  
Arterial hypertension  
Ischemic heart disease  
    stenocardia  
    infarction  
    postinfarction- and atherosclerotic cardiosclerosis  
Congenital and acquired defects of heart  
Diseases of myocardium  
    myocarditis  
    cardiomyopathia  
Diseases of endocardium  
Diseases of pericardium  
Cardiac arrhythmia and conduction disturbances  
Cardial insufficiency  
Vascular vegetation system malfunction  
Embolism of pulmonary artery

#### 4.1.3 Gastro-intestinal diseases

Esophagitis  
Achalasia of esophagus  
Peptic ulcer of esophagus  
Cancer of esophagus  
Hernia of esophageal entrance of diaphragm  
Acute and chronic gastritis  
Spasm/stenosis of pylorus  
Ulcer disease, gastric and duodenum ulcers  
Gastric tumors  
Gastric cancer  
Postoperative gastric syndrome  
Acute and chronic enteritis  
Acute and chronic colitis  
Non-specific ulcer colitis  
Functional disturbances of digestion  
Functional diseases of intestines  
Intestinal tumors  
Rectal cancer  
Acute and chronic pancreatitis  
Pancreatic cancer  
Intestinal disbacteriosis

#### 4.1.4 Diseases of liver and biliary ducts

- Cholecystitis
- Cholangitis
- Cholelithiasis
- Postoperative gallbladder syndrome
- Gallbladder and biliary ducts tumors
- Acute hepatitis
- Chronic hepatitis
- Cirrhosis of liver
- Tumors of liver
- Parasitic diseases of liver

#### 4.1.5 Diseases of urino-genital system

- Acute and chronic glomerulonephritis
- Acute and chronic pielonephritis
- Amiloidosis of kidneys
- Urolithiasis
- Toxic renal impairment
- Kidney tumors
- Cystitis
- Urethritis
- Congenital defects of kidneys and urinary tract
- Prostatitis
- Prostatic adenoma and cancer
- Tumors of bladder
- Phimosis and paraphimosis
- Cryptorchism and other defects
- Vesicouretric reflux
- Urine incontinence
- Chronic renal insufficiency

#### 4.1.6 Hematologic diseases

- Anemia
- Hemorrhagia
- Agranulocytosis
- Acute and chronic leukemia
- Erithremia and erithrocytosis
- Myeloid disease
- Lymphadenopathia
- Lymphogranulomatosis

#### 4.1.7 Endocrinologic and metabolic diseases

- Diabetes mellitus
- Diabetes insipidus
- Thyroiditis
- Endemic and toxic goiter
- Thyroid cancer
- Hypothyrosis
- Itzenko-Cushing's syndrome
- Addison's disease
- Pheochromocitoma
- Obesity
- Gout
- Vitamin deficiencies, rickets

Phenylketonuria  
Metabolic disturbances

#### 4.1.8 Diseases of skeleton-muscle system and connection tissue

Lupus vulgaris  
Scleroderma  
Nodal periarteritis  
Dermatomyositis  
Rheumatism  
Rheumatic arthritis  
Deforming osteoarthritis  
Bechterew disease (ankylosing spondylarthritis)  
Reiter disease/syndrome  
Bursitis, tendo-vaginitis, synovitis, miositis  
Platypodia (flat foot)  
Torticollis (stiff-neck)  
Congenital club foot  
Congenital displasia/underdevelopment of hip joint  
Other anomalies of joints and connective tissue  
Spinal chondrosis  
Spinal deformations  
Bone diseases

#### 4.1.9 Infectious diseases

Intestinal infections  
Airborn infections  
Food poisoning  
Major contagious infections  
Paediatric infections  
Parasites  
Wound infections  
AIDS  
Other infections

#### 4.1.10 Tuberculosis

Lung and Pleura TB  
Non-pulmonary TB

#### 4.1.11 Neurological diseases

Epilepsy  
Central Nervous System (CNS) vascular diseases  
    Transient impairment of cerebral circulation  
    Stroke  
Peripheral Nervous system vascular diseases  
    Neuritis  
    Plexitis  
    Radiculitis  
    Polyneuropathias  
Inflammation of brain and cerebral membranes  
    Meningitis  
    Arachnoiditis  
    Encephalitis  
Brain injuries  
    Brain concussion  
    Perinatal encephalopathy

## Congenital diseases

### 4.1.12 Psychiatric diseases /to be completed/

- Border-line conditions
- Psycho-somatic disturbances
- Psychosis
- Schizophrenia
- Chronic alcoholism
- Drug abuse

### 4.1.13 Sexopathology

### 4.1.14 Skin diseases and sexually transmitted diseases

- Non-infectious skin diseases
- Pyodermatitis
- Virus dermatosis
- Fungous skin and nail diseases
- Dermatozoonosis
- Skin cancer
- Bedwounds
- STD

### 4.1.15 ENT

- Congenital defects
- Rhinitis
- Sinusitis
- Pharyngitis, laryngitis
- Quinsy and chronic tonsillitis
- Polyps of upper respiratory tract
- Nasal, pharyngeal and laryngeal cancer
- External and middle otitis
- Foreign body of ear
- Wax plug
- Hearing impairment/diminution

### 4.1.16 Eye diseases

- Congenital defects
- Conjunctivitis
- Blepharitis
- Hordeolum
- Keratitis
- Glaucoma
- Cataract
- Inflammation of lacrimal gland and duct
- Foreign body of eye
- Strabismus
- Accommodation impairment

### 4.1.17 Diseases of oral cavity

### 4.1.18 Surgical diseases

- Acute abdomen
- Vascular diseases
  - Pulmonary artery, mezentery and limbs vessels embolism
  - Obliteraing endarteriitis

- Dilatation of veins
- Phlebitis, thrombophlebitis
- Purulent conditions and infected wounds
- Mammary glands diseases
  - Mastitis
  - Mastopathy
  - Fibroadenoma
  - Breast cancer
- Traumas
- Wounds
- Dislocations
- Fractures
- Fissure
- Burns
- Frostbite
- Cutaneous and subcutaneous benign neoplasms
- In-grown nail
- Hernia
- Diseases of rectum
  - Hemorrhoid

#### 4.1.19 Diseases of female genitals and mammary glands

- Acute and chronic salpingitis and oophoritis
- Menstrual cycle disturbances
- Threatened abortion
- Toxemia of pregnancy
- Postpartum diseases of mammary gland
  - Nipple fissure
  - Abscess of mammary gland
  - Not purulent mastitis

#### 4.1.20 Allergic diseases

### 4.2. Emergency Medical Care

Family physician should be able to diagnose and provide pre-hospital emergency care, as well as define tactics of further medical care in following conditions:

- Shock
- Fainting
- Collapse
- Coma
- Acute respiratory insufficiency
- Laryngeal edema, false croup
- Asthmatic status
- Quincke's edema
- Pneumothorax
- Embolism of pulmonary artery
- Acute cardiac insufficiency
- Cardiac arrhythmia and conduction disturbances
- Hypertensive crisis
- Attack of angina
- Miocardial infarction
- Renal colic
- Liver colic

Bleeding  
Acute retention of urine  
Anuria  
Stroke  
Brain edema  
Pulmonary edema  
Cramps  
Epileptic status  
Delirium tremens  
Abstinence  
Psycho-motor lability  
Acute attack of glaucoma  
Chemical and thermal combustion, frostbite  
Electric shock. Shock caused by lightening. Sunburn and thermal shock.  
Poisoning  
Drowning, strangulation  
Thyreotoxic crisis  
Pre-eclampsy and eclampsy  
Bone fracture, joints dislocation, trauma, strain, wound  
Clinical death  
Sudden death of a child

#### 4.3 Medical skills and interventions

Family physician should be able to perform following activities:

##### 4.3.1. General skills

all types of injections  
I/V injection of drugs and blood substitutes (dripping and flow)  
Intra-cutaneous diagnostic and allergic tests  
Determining of blood group, Rh-factor, individual and biological compatibility  
Determining of blood fitness for transfusion  
Hemotransfusion  
General blood test  
Arresting of external bleeding  
ECG procedure. ECG interpretation  
Peak-flowmetry (determining of bronchial passability/obstruction)  
Finger examination of rectum and prostate

##### 4.3.2 Emergency care.

Artificial respiration “mouth-to-mouth, mouth-to-nose”  
Indirect massage of heart  
Defibrillation  
Aspiration of upper respiratory tract, aspiration of fluid  
Catheterization of bladder  
Catheterization of major vessels

##### 4.3.3 Surgical procedures

Anesthesia through infiltration  
Primary surgical exploration of wounds, putting and removing of sutures  
Exploration of infected/contaminated wounds  
Exploration of burn and frosted surfaces  
Bandaging/dressing

Reduction of dislocation and primary immobilization  
Transportation immobilization of different types of fractures  
Removal of superficial foreign body  
Cut/opening of abscess, phlegm, panaricium  
Removal of in-grown nail  
Palliative puncture of abdominal cavity in ascitis

#### 4.3.4 Essential procedures and skills in neurology

Examination of motor functions (posture, muscle tension, contraction, muscle atrophy)  
Determination of sensitivity  
Examination of tendon reflexes  
Examination of motor coordination  
Examination of function of cranial nerves

#### 4.3.5 Essential procedures and skills in ENT

Anterior and posterior rhinoscopy, pharyngoscopy, laryngoscopy and otoscopy  
Arresting of nasal bleeding (anterior and posterior tamponade)  
Passability of external auditory passage  
Douching of tonsils  
Audiometry

#### 4.3.6 Ophthalmological procedures

Determination of vision and color sensitivity  
Ophthalmoscopy  
Determination of intra-ocular pressure  
First aid of eye and surrounding tissue traumas and burns  
Treatment of “red eye” syndrome

#### 4.3.7. Essential procedures and skills in Pediatrics

Appraisal of newborn’s physical condition  
Primary cleansing of newborn and umbilical cord  
Examination of reflexes of newborn  
Appraisal of psycho-motor and physical development of child  
Vaccination

#### 4.3.8. Essential procedures and skills in Ob-Gyn

Bi-manual vaginal and rectal-vaginal examination- except of pregnant  
Determination of pregnancy and terms  
Functional methods of diagnostics  
External obstetrical observation, evaluation of fetal heartbeat  
Directing of normal delivery  
Appraisal of placenta condition

Note: FP competency in terms of all the mentioned above conditions and interventions is limited within the frame of “ FP guidelines”, being developed in the Ministry of Health.

#### 4.4 Organizational Work.

The Family physician should know the demographic and medical-social characteristics of his/her service/catchment population, on which one should base the organization of following activities:

- 4.4.1 Provide elementary medical knowledge, promote healthy lifestyle, teach the hygienic principles to different groups of population
- 4.4.2 Provide services concerning planning, ethical, psychological, social, medical-genetic and medical-sexual aspects of the family
- 4.4.3 Provide follow up of pregnant woman throughout pregnancy, diagnose and treat non-genital diseases of pregnant woman, control the postpartum period of woman
- 4.4.4 Prepare pregnant woman and her family for delivery
- 4.4.5 Take control over woman's health through the whole life
- 4.4.6 Advise parents concerning the care and feeding of children, their sexual and physical development, as well as the specificity of sexual maturation of teenagers
- 4.4.7 Contribute to developing normal conditions for physical and psychological well-being of family members
- 4.4.8 Participate in implementation of family social programs
- 4.4.9 Participate in hygienic and anti-epidemic service programs, involving directors of institutions and enterprises, entrepreneurs and public organizations in implementation of health promotion activities
- 4.4.10 Perform activities in identification of diseases in early and latent stages, identification of risk factors and means to eliminate them
- 4.4.11 When necessary, involve services of related medical-prophylactic institutions in curative, preventive and rehabilitative actions
- 4.4.12 Provide testing of temporary disability and present to Medical Expertise Committee, if so required
- 4.4.13 Provide medical-psychological assistance to the served population
- 4.4.14 Provide appraisal of population's health condition, data recording, analysis and reporting.