

# Assessment of the health system of the Republic of Macedonia

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*Findings and recommendations*

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## Table of contents

<b>1. EXECUTIVE SUMMARY</b> .....	<b>3</b>
<b>2. BACKGROUND AND RATIONALE FOR THE ASSESSMENT</b> .....	<b>4</b>
<b>3. METHODOLOGY</b> .....	<b>5</b>
<b>4. LIMITATIONS</b> .....	<b>6</b>
<b>5. FINDINGS</b> .....	<b>7</b>
5.1. FACULTY OF MEDICINE, SKOPJE .....	7
5.2. UNIVERSITY CLINICAL CENTER, SKOPJE .....	8
5.3. MINISTRY OF HEALTH .....	9
5.4. INSTITUTE OF PUBLIC HEALTH .....	9
5.5. MACEDONIAN DOCTORS ASSOCIATION .....	10
5.6. VISITED SITES .....	10
5.7. PRIVATE HOSPITALS .....	11
5.8. HEALTH INSURANCE FUND .....	11
5.9. CENTER FOR FAMILY MEDICINE.....	12
5.10. FOREIGN DONORS AND PARTNER ORGANIZATIONS.....	12
5.11. INFORMAL MEETINGS .....	13
<b>6. KEY FINDINGS</b> .....	<b>14</b>
<b>7. MAIN PRIORITY AREAS AND OPTIONS FOR CONCRETE SUPPORT</b> .....	<b>16</b>
7.1. EDUCATION AND PROFESSIONAL DEVELOPMENT .....	17
7.2. HOSPITAL QUALITY ASSURANCE PROJECTS AND ACCREDITATION;.....	18
7.3. DATA MANAGEMENT AND INTELLIGENCE .....	19
7.4. STRENGTHENING THE PREVENTION PROGRAMS .....	20
7.5. ORGANIZATION AND SUPPORT FOR DEVELOPMENT OF EMERGENCY MEDICINE CENTER AND TRANSPORTATION.....	20
<b>8. CONCLUSIONS</b> .....	<b>21</b>
<b>9. ANNEXES</b> .....	<b>23</b>
9.1. LATEST KEY HEALTH INDICATORS FOR MACEDONIA .....	23

## **1. Executive summary**

This intensive mission for assessment of the health care system in Macedonia provided unique opportunity to investigate and identify the most acute problems of the health care system. Strong interest was expressed from all involved parties to develop health project by the Swiss Agency for Development (SDC) and Cooperation in Macedonia. Our assessment revealed several main areas that could serve as basis for development of national scale projects under which umbrellas small actions can be delivered. The proposed areas are selected as entry points for the SDC in the health system of Macedonia based on the assessed needs, interest among concerned stakeholders to participate in its development and implementation, possibility to provide better health outcomes to citizens. The proposed areas are selected and focused mainly to strengthen the delivery and intelligence functions of the health care system. Such approach is expected to provide impact on the system level, and over whole population as well as to identify and benefit specific target groups in Macedonia. The proposals are: to improve the educations of medical professionals in the country; increase standards and quality of health care delivered in hospitals; strengthen data management and health intelligence; raise awareness for the need of prevention projects and development of policy and integration of the emergency medicine at the national level.

- The development of integrated national system of Continuous Medical Education for medical professionals is likely to increase the quality of services medical professionals provide to their patients. Well-trained and educated doctors across all levels of the health care system will strengthen the delivery function of the system and improve health outcomes of the population on a long run.
- Implementation of national strategy and process of hospital accreditation is important to standardize the quality of health care services delivered in different facilities. Again, implementation of this program is expected to increase standards in the delivery of health care services, and to decrease the rate of accidents due to intra hospital infections and medical errors to which patients from all age groups are exposed.
- Improved system of data collection, management and report production would significantly increase the transparency in the health care system.

This would enable development of more focus and policies targeted towards specific vulnerable groups of the population.

- Development of prevention programs that would directly target specific vulnerable groups of the population that suffers from high rates of mainly preventable diseases.
- Finally, development of national strategy to reform and integrate the organization of the emergency medicine in the country.

High centralization of the health care system in Macedonia is expected to enable development of national programs that would be directly reflected at the local level and would meet the need of the populations. The list of these proposals should serve as starting basis for discussion and further clarifications. Development of detailed project proposals will require more in-depth analysis and involvement of other partner organizations.

## **2. Background and rationale for the assessment**

Macedonian health care system is established to follow the values of solidarity, equity and participation of all citizens in the country. The health system is predominantly financed by compulsory social health contributions set as 7.2% from the gross salary of the employees, but additional funds are coming from the budget of the ministry of finance. The main purchaser of health care services is the central Health Insurance Fund with its monopoly position. Health care delivery system is organized in three main levels: primary, secondary and tertiary level. The primary level includes provision of services within the primary health care clinics and it is responsible for limited scope of preventive services such as immunization and patronage. All general practitioners are gatekeepers and responsible to refer patients towards the upper levels of the system. With the last changes (2012) in the bylaws the GP's are conditioned to refer patients' only to secondary (specialist) level, and not directly to tertiary level which was the case before. The primary health care doctors are paid according to capitation formula/model. Fixed salaried receive only doctors responsible for preventive services. The secondary level includes specialists' doctors who work in Health care centers, private clinics, and general hospitals. The tertiary level of the health care delivery system belongs to the University Clinics in Skopje. However, this division of three levels of the health care system is more theoretical than applied in practice. There are many overlaps in the delivery of health care services between various levels of the health care system.

The Macedonian health care system is under continuous reforms since the independence of the country in 1991. Most of the health care reforms are just partially completed. There is no long-term development goal that is followed as various government cabinets' changes. Since 2006 all primary care doctors are privatized and paid according to the number of patients enrolled at their lists. All other doctors working in the public sector still receive fixed salaries, regardless of the volume or quality of services they produce. Every year HIF signs contracts with public and private providers for specified type and volume of services providers need to deliver within the following year. The demand to increase the production of services does not result in appropriate increase of the provider's budgets due to the financial constraints of the HIF. Thus, the public health providers are not stimulated to produce more services, but to cope and survive within existing budgets. Over the years, lack of financing, investments and appropriate set of incentives has reflected both on deterioration of physical infrastructure and availability of medical equipment. Subsequently, the quality in provision of health services within the public facilities decreased followed by low level of patients satisfaction. Regardless of the fact that more than 90% of the population in the Republic of Macedonia are insured within the social system, the out of pocket expenditure continue to rise. In parallel to these processes, liberalized health care market regulation stimulated trend in commercialization of the health care services and investment in new for-profit hospital services. Long transition and ineffective reforms in the public health sector forced huge number of health personnel to migrate from public to the private health sector.

Since 2009, the government started to renovate old health system infrastructure and to purchase modern equipment for the public health facilities. Many new reforms have been introduced and health is placed high on the political agenda. Our assessment revealed that old problems still remain: poor motivation among medical personnel, lack of appropriate incentives and strong politicization of the system. The public health care system still holds the major burden for the health care delivery in the country. It is important to use the momentum, identify the "champions" within the system and support ongoing developments that would result in improved health outcomes for the population on the long run.

### **3. Methodology**

The main purpose of the assessment was to assess the capacities of health care system, and to explore the possibilities for intervention of the Swiss Agency for Development and Cooperation in the health care sector of the Republic of

Macedonia. The assessment consisted of two main components: a preparation phase with desk research to review available documents and published policy papers on health system reforms in Macedonia, and field research mission in the selected health care facilities and institutions in the cities of Skopje, Tetovo, Veles and Stip. More than thirty stakeholders including high policy makers (Minister of Health, directors of the Health Insurance Fund, dean of the Faculty of medicine), directors of public and private hospitals, doctors from private and public sector, as well as representatives of the official medical associations were interviewed. All meetings and interviews followed the similar format. First the consultants introduced the purpose of the visit, familiarized the interviewees with the objectives of the assessment and requested respondents to describe the most acute needs in the health care system. The principle question put forward to all interviewees was: **What are the main priorities that should be done in the health care system in Macedonia both from micro or macro level?**

#### **4. Limitations**

This approach enabled open and candid discussions, but its main limitation was that it provided broad range of topics to be opened and discussed. Moreover, the respondents were not prepared to list the priorities and therefore the discussions were either too general, or too specific. Short duration of the assessment did not allowed for more detailed analysis of the main entry points for possible interventions. Development of detailed program for support would require more specific and detailed analysis of particular segments in the health care system of Republic of Macedonia.

## **5. Findings**

At all levels of the health care system there is need to improve and support the continuous medical education and training of doctors at all levels of the health care system. The primary health care system has undergone most significant reform, but its further strengthening is clearly required. The ministry of health in collaboration with World Bank and the Faculty of Medicine embarked towards process for development of Family medicine in the country. This project is run by small group of enthusiastic doctors with a potential to further champion this reform in the years to come. The population in the country across all ethnic groups suffers of high rates of non-communicable diseases compared to EU countries. NCDs are estimated to account for 95% of all deaths according to WHO. The high burden of NCD's emphasizes the need to strengthen public health prevention projects. Demographic shift, ageing of population and increased number of people with chronic diseases requires well developed system of chronic diseases management. This is missing in the current system. There is tremendous need to improve data management and statistics in the country. The Institute of Public health has limited human resources and low financial capacities to produce what is required in terms of relevant and on time reports and publications. The introduction of the DRG system in the hospitals provided more data, but there is lack of coordination and collaboration among main actors within the system in using these data to develop specific health policies. Public health research is limited and it is quite difficult to get to recent data on health system performance.

In lights of this summary the findings section is organized in chapters as the assessment of the health system in Macedonia progressed over the one-week field mission. Each of the chapters summarizes the content of the meetings and discusses the main interests for support expressed by the interviewees. Key findings are summarized and listed in the subsequent chapter.

### **5.1. Faculty of medicine, Skopje**

The consultants together with the representatives of the Swiss Agency for Development and Cooperation met with the dean and vice deans at the Faculty of Medicine to present the purpose of the meeting and idea behind the assessment. The discussion developed in two directions: to explore the possibilities of cooperation of SDC in the health sector, and to assess the interest

of Faculty of medicine for the need of involvement in the health system. The dean explained the idea to develop a special Center for continuous medical education and professional development; they were interested to explore the possibilities for collaboration with universities from Switzerland. The dean also expressed his interest to invest in the CME center as part of the existing Family medicine program, and further to develop the Cathedra of family medicine. He also said that his team will review the needs and send further info for new possibilities for collaboration.

### **Main interests for support**

Education, twinning programs, development and support for CME center, family medicine

#### **5.2. University Clinical Center, Skopje**

The consultants met and interviewed five doctors at the clinics of the university clinical center in Skopje who were directors, or former directors of individual university clinics. Each meeting and interview was conducted separately. The first meeting was with prof. Borche Georgievski the last director of the unified University Clinical Center in Skopje. Further interviews were conducted with Prof. Micho Panovski and prof. Sasho Karagjozov, former and present director of the University Clinic of Abdominal Surgery. The consultants met with Dr. Sasha Jovcevski director of the University Clinic for Gynecology and finally with Dr. Vladimir Chadikovski, founder of the National Foundation for Transplantation and surgeon at the University clinic of Pediatric Surgery. Each of these meetings lasted approximately 30-45 minutes.

The doctors first discussed general problems facing the health care system, and in more details were describing the micro problems specific to their domains of work. Some of the issues discussed in more details were related to bone marrow transplantation, liver transplantation, specific types of abdominal surgeries, and the need for professional training via twinning programs. One of the doctors emphasized the need for more focus on prevention and screening programs. Many patients are diagnosed in the progressive phases of malignant diseases when they are inoperable what makes the treatment more expensive and not effective. There is acute need to increase the focus on preventive activities. All of them were open for collaboration and they were interested to explore the possibilities where they can get assistance from SDC.

### **Main interests for support**

Specific support for development of disease oriented projects, knowledge sharing, twinning programs, prevention.

#### **5.3. Ministry of Health**

The visit in the MoH included interviews with two key senior policy makers responsible for primary health care sector and for the European integrations. Separate meeting was organized with the Minister of Health and his team.

The meeting with Dr. Zoran Stojanovski, former State Secretary of Health, focused mainly on the current setting of primary health care system. He described in details the planned reforms in the health care system and ongoing plans for development of family medicine. Also, he stressed the importance of health of vulnerable groups in the country, particularly the Roma population. He was very supportive of the primary health reforms in the country and development of the family medicine program. He underlined the ongoing efforts of the ministry of health to retrain and educate 2000 primary health care doctors as family medicine practitioners by 2020.

Snezana Cicevalieva as responsible for EU integration and collaboration with foreign agencies briefed the consultants on the current status of the reforms in the Ministry of Health. At present she acts as president of the South East European Network of WHO for Europe. This meeting provided an opportunity to discuss the activities of WHO Euro within the domains of work.

The final meeting at the end of the mission was with the Minister of Health and his team. The Minister welcomed the possibility of Swiss involvement in the health sector and designated one of his personnel as responsible for communication with the Swiss embassy.

### **Main interests for support**

Primary health care, family medicine, Roma health, support of the SEE network

#### **5.4. Institute of Public Health**

The consultants met with the director of the Institute of Public Health Dr. Shaban Memeti and his key advisers. This meeting emphasized the importance of clear strategy in financing of public health in the country. The director stresses the need for more capacity building and training of the personnel of the IPH. The

problem with collection of data, statistical analysis and production of regular reports was also articulated in the discussion.

**Main interest for support**

Training, capacity building, statistical analysis

**5.5. Macedonian Doctors Association**

The president of the oldest doctor's association in Macedonia and former minister of health Prof. Jovan Tofoski welcomed the opportunity to discuss the burning issues of the health care system with the consultants. He listed a number of problems, but the most important was lack of clear strategy and vision among the high policy makers in the development of the health care system. He explained that the doctors are very unsatisfied with the working conditions and atmosphere where they work. There is huge administrative workload, and permanent media attacks over doctors. His main message was the importance of education and training for the doctors in the country.

**Main interest for support**

Education, training, policy development, strategy

**5.6. Visited sites**

Apart from the visits in Skopje, the consultants conducted three site visits in three cities in Macedonia. The first visit was in the clinical hospital Tetovo, while the second visit took place in the cities of Veles and Stip. Both field missions included formal interviews and conversations with the doctors working in the hospitals, visit at the hospital departments and informal lunches and talks with doctors.

From the visit in the clinical center in Skopje, the first impression is that the hospitals are old, not well organized, overloaded with patients, and with poor equipment. The consultants had opportunity to discuss both with highly enthusiastic and optimistic director in the hospital in Tetovo, to very low motivated and dissatisfied director of the clinical hospital in Stip. The lack of funding, poor motivation of the staff, inability of the hospital management to recruit required personnel due to high centralizations of powers was just some of the listed problems.

**Main interest for support**

Funding, equipment, training

## **5.7. Private hospitals**

The interviews in the private hospitals included site visits and conversations with directors and managers in the two biggest private hospitals: Achibadem Sistina and Re-Medica. The visits to these hospitals reveal completely opposite picture for the one in the public health care system. Contrary to the old buildings, poor equipment, and demotivated staff working in the state/public hospitals, the private health sector is flourishing. These two hospitals are new, with latest state of the art medical equipment. The first impression upon the visitor in these hospitals is that they are full with patients, clean and well organized. The directors described to the consultants their views and concerns of the current health care system. In words of one of the directors the current state of the Macedonian health system is clear example of "country with missed opportunities".

### **Financing of the private hospitals**

The private hospitals have contracts with the Health Insurance Fund only for a limited number of services they provide to their patients such as in-vitro fertilization and cardiac surgeries. Most of the services they provide are paid fully in cash by the patients. This is what makes the situation in Macedonia unique: the existence of a parallel private health care system that is fully paid by patients, regardless of the fact that almost all citizens are insurers of the state Health Insurance Fund.

### **Main interest for support**

Prevention, clear health policy directions, development of private insurance, full integration in the social health insurance system

## **5.8. Health Insurance Fund**

The meeting in the HIF with the directors was long and covered many topics. The directors were willing to learn all possibilities for collaboration. They briefed the consultants on the current problems facing the financing of the health care system. One of the main interests they wanted to explore was the possibility for a training program for their staff in some of the health insurance funds in Switzerland. It was also made clear to the consultants that there is lack of integration in the policies development between the HIF and MoH. The Ministry of Health has already existing bilateral contracts with Germany, Israel and other countries for the purpose of strengthening collaboration in the health sector.

Although these contracts are open, the management of the HIF was not aware of the existence of such contracts and possibilities they may provide.

**Main interest for support**

Twinning programs, specific trainings for DRG, strengthening of control mechanisms

**5.9. Center for Family medicine**

The consultants visited the newly established center for Family Medicine (CME) in Skopje and met with the Head of the center dr Katerina Stavric. This center is established under the auspices of the Faculty of medicine in Skopje, and serves as basis for educational and training development of doctors of medicine who pursue their careers in the field of family medicine. The development of the center has been supported with the funds from a World Bank loan. The center has one teaching room well equipped with capacity of 30 seats. In addition there are training rooms where doctors can learn and practice using new equipment. While the existence of this center enables the creation of a new generation of doctors trained in family medicine, there is a need for further strengthening of the process throughout the country. In its current form the Center is part of the Faculty of medicine, but it lacks clear financing strategy for further development. Dr. Stavric briefed the consultants on the status of four other centers for CME that were built within the first World Bank project in Veles, Prilep, Strumica and Skopje. Unfortunately, after the closure of the WB project, the CME centers continued to collapse due to lack of financing and clear strategy for their maintenance.

**Main interest for support**

Renovation of existing CME centers, financial support for the existing center, publication of teaching materials, development of new courses

**5.10. Foreign donors and partner organizations**

The consultants met with representatives of the World Health Organization in Skopje and visited the Dutch Embassy. The purpose of these meetings was to understand the situation with foreign donors in the country. The WHO office in

Skopje is working in line with the existing biannual agreements with the Ministry of health and WHO is not considered a big donor. Most of their activities are aligned with the overall WHO programs from Copenhagen office. WHO also provides short term technical assistance support missions by request of the Minister of Health. Most recent missions have been completed for the assessment of the basic benefit package, and health system financing.

The Dutch Embassy was a big supporter and big donor in the country. Most of the programs supported by the Dutch Trust Fund have been administered via the World Bank project. Since its closure the implementing partner is directly the beneficiary, Ministry of Health.

### **5.11. Informal meetings**

Over the mission consultants had informal lunches and dinner with doctors working in the hospital in Stip, employees from the Ministry of Health and former director of the Health Insurance Fund. These meetings enabled open conversations to discuss the burning issues facing the health care system. All of the interviews expressed dissatisfaction with the current health care system. Main problems were high politicization, lack of financing, poor motivation, and no clear vision for the development of health policies.

## **6. Key findings**

### **1. Lack of clear vision for the development of health care system**

All interviewees were unified that there is no clear vision for the development of the health care system. Although there is official Health 2020 Strategy adopted by the Ministry of Health, none of the interviewed stakeholders were convinced that the health care system follows the strategy.

### **2. High centralization, and government control**

The health care system is highly centralized. All decisions are top-down directed, managers of hospitals act as administrators, not as managers with little power to make autonomous decisions. This is completely opposite from the initial reforms that were planned by the government in 2006. The initial ambitions of the government were to increase the autonomy of the hospitals and to introduce effective management in all health care institutions.

### **3. More focus on small projects and micro management**

Lack of clear strategy and vision for the development of national health care system, fostered all interviewees to be more focused in their requests towards development of small projects and actions related to their work.

### **4. High out of pocket expenditure for the patients**

The out of pocket expenditure is estimated to be over 35% of total health expenditure in the country (WHO Euro), but it is very likely that this figure is underestimated. Part of this high out of pocket expenditure is due to large and growing private health sector where citizens are forced to pay for services in cash. The Health insurance fund covers only limited number of services provided in the private hospitals. In addition, out of pocket expenditure is due to purchasing of pharmaceuticals, informal payments, medical devices, etc.

### **5. Poor data management and statistics**

Poor data management and statistics, lack of transparency and limited scope for public health research are one of the key factors that disable development of clear policy directions. In order to define, implement and evaluate health policies, the Ministry of Health should be able to use data and produce meaningful reports. This is missing in the current system. Clear example is the situation with increased maternal and infant mortality rates. Namely, in 2010 it was reported by the State Statistical Office that the infant mortality increased for 30% in less

than one year. This information correlated with the fatal cases of few mothers and babies who died over deliveries in three general hospitals in the country. In response to this, then Minister of Health asked the Statistical office to check the data since there must have been some mistake. There was no initiative to review or to further research the issue.

#### **6. Clear need for further training, education and professional development**

Almost all interviewed stakeholders expressed interest and need for more training, education and further professional development. Education is key component to advance the quality of services provided in the public sector.

#### **7. Prevention was emphasized as important area for possible intervention in the health sector**

The need for development and promotion of preventive project is acute need in the Macedonian health care system. This finding was articulated in the discussion both with doctors working at the curative and preventive levels of the health care system. High burden of non-communicable diseases such as cancer, cardio- and cerebro-vascular, diabetes with much higher rates compared to western European countries.

## **7. Main priority areas and options for concrete support**

The health care system in Macedonia is highly centralized. All decisions are coming from the central government and further implemented along the levels of the health care system. There is limited involvement of local governments in development of health care policies. Decentralizations and devolution of powers were integral part of the Framework Agreement in the country as of 2001, but local authorities from all ethnic groups hesitated to assume new responsibilities in the domain of health of their populations. There were two main arguments of the central government against more devolution of power in health at the local level: low human resource capacities at local level, and lack of financial resources to support these policies. On the other hand, the centralization of the system prevents its further fragmentations and it enables more efficient use of resources for health. In the light of the findings from the current assessment of the health care system in Macedonia, high centralization can be used to develop national programs and under its umbrella to direct projects that would target specific groups in need. Such approach would have effects both on national and local level, and its impact would be gender balanced and across all ethnic groups. This rapid assessment identified five main possible areas for support and development of programs in the health care system of the Republic of Macedonia. These areas are proposed in line with the duration of the assessment, availability of the planned budget, possibility to provide sustainability of the projects, as well as the impact and visibility the proposed project can make within the planned duration.

### **a. Development of National programs**

- Continuous Medical Education and professional development of medical doctors in the country;
- Hospital quality assurance projects and accreditation;
- Improve and support the data management and intelligence functions at national level;
- Technical assistance in development and strengthening of prevention programs;
- Organization of emergency medicine transportation.

## **b. Small actions**

- Specific diseases management (stroke, cancer screening)
- Twinning programs and knowledge sharing;
- Education courses;
- Maternal and infant mortality – ethnic disparities

There are three main arguments that served as basis and rational for selecting these five main areas.

Firstly, all interviews and conversations both with the representatives from the public and private health care sector identified and confirmed that entering in to some of these areas would provide benefit for the health care system in the country.

Secondly, they open the possibility to design national programs that would be consisted of several integrated components. These programs would equally be beneficial to all citizens across gender and ethnic lines.

And thirdly, its implementation and further support is in line with the current interests of the government and Ministry of Health, as well as availability of individuals who are willing to take the projects forward. This is important since one of the main problems in the health system with the international donations is sustainability of the projects in a long run.

### **7.1. Education and professional development**

Improved education of medical doctors and need for continuous training have been explicitly requested by all participants in the interviews. There are various possibilities how this area can be approached, but the most important is to select the process that has existing roots, qualified personnel and possibility to provide long-term sustainability. Along these lines, the most cost effective way to approach development of this program is to use the existing capacities at the Faculty of medicine in Skopje, and more specifically in the Center for family medicine. This center has been recently opened (2011) and it struggles to maintain its financial support. At present this center serves as training only for doctors who are doing their specialization and retraining in family medicine. But

it can be also used for development of other types of professional training programs. The proposed project here would include three components:

- Policy development: proposal for integration of all CME centers under one umbrella (MoHand FoM);
- Renovation and equipment: renovation of satellite CME centers in Veles, Stip and Strumica;
- Preparation, development and publication of practical guidelines for family medicine to be distributed to all doctors in the country;
- Development of specific training courses for doctors (quality control, medical errors, etc.)

The development of integrated national system of Continuous Medical Education for doctors is expected to result in improved health outcomes for the population. Well-trained and educated doctors at all levels of the health care system will improve the delivery function of the system, better and on-time diagnosis, prevention and improved health outcomes. Project should consider development of specific programs for medical personnel working with vulnerable groups to identify their needs, and improve their health status.

Partner organizations: Faculty of Medicine, Ministry of Health, Center for family Medicine, health care organizations.

Beneficiaries: medical doctors, patients.

## **7.2. Hospital quality assurance projects and accreditation;**

The quality of care provided in the public hospitals has been placed high on the policy agenda. Most of the current efforts are focused towards renovation of facilities and purchasing of new equipment. Little has been done on the side of quality assurance. There is urgent need for the Ministry of Health to tackle this area, and to standardize the quality of health care services provided in the public hospitals in the country. The new health care law adopted by the parliament in its first phase in February 2012 considers opening new Agency for accreditation of health care institutions. However, there is little experience and capacity in the country to implement such ambitious program. It is to be expected that Swiss involvement in this area will be welcomed and supported by the officials in the Ministry of Health. The proposed program would include these components:

- Technical assistance for development of national strategy for quality assurance in hospitals;
- Technical assistance for development of hospital accreditation system;

- Support of development of National Agency for accreditation;
- Training of personnel, study tours and knowledge sharing in selected hospitals in Switzerland.

This project would consider technical assistance training and twinning programs with selected Swiss hospitals.

Implementation of national strategy and process of hospital accreditation would enable standardization of the health care services delivered in different health care facilities. This is expected to increase standards in the delivery of health care services, and to decrease the rate of accidents due to intra hospital infections and medical errors to which patients from all age groups are exposed.

Partner organizations: Ministry of Health, Health insurance fund, public hospitals, Faculty of medicine, School of public health

Beneficiaries: health system, hospitals, patients.

### **7.3. Data management and intelligence**

Poor data management and intelligence is one of the burning problems in the health care system. One of the key functions of the Ministry of Health in order to develop appropriate policy process is use of data to feed the policy process. It is of necessity to strengthen the health information system and human resource capacities in support of the policy-making processes. This project would include:

- Development, regulation, definition and unification of the health database and architecture of the system;
- Establishing clear intelligence function to feed policy-making process;
- Consider support in establishing a National Health Information Centre (data collection, cleaning and processing) as part of the Institute of Public Health;
- Training of personnel in statistics, data management, report writings

Improved system of data collection, management and report production would significantly increase the transparency in the health care system. This would enable development of more focus and policies targeted towards specific vulnerable groups of the population. Good data system is prerequisite to identify, develop, implement and monitor specific actions in the health care system.

Partner organizations: Ministry of Health, Institute of public health, Health insurance fund, Statistics Agency.

#### **7.4. Strengthening the prevention programs**

Prevention has been explicitly required as important field for interventions in the health sector in Macedonia. It was interesting that over the interviews two surgeons stressed the need to improve the activities in relation to the prevention programs for specific diseases. The available data for some diseases such as cervical, colonel cancer, stroke, cardio vascular diseases are much higher compared to western European standards. The program would include:

- Identification of priorities for development of national public health prevention programs;
- Training and education;
- Development of Promotion campaigns;
- Implementation of screening programs

The prevention programs would directly target specific vulnerable groups of the population that suffers from high rates of mainly preventable diseases.

Partner organizations: Ministry of Health, Institute of public health, media.

Beneficiaries: specific vulnerable populations in the country at high risk.

#### **7.5. Organization and support for development of emergency medicine center and transportation**

Emergency Care refers to the medical care, including medical assessment, monitoring, treatment, and transportation that may be provided to a person in responding to an actual or reported emergency. Macedonian system of Emergency medicine currently operates at the primary level via emergency ambulate vehicles that mainly serve to transport the patients to the trauma centers in general hospitals or to provide small interventions at the place of the emergency event. In 2010 the government established the University Clinic for Urgent (emergency) medicine by merging four University Clinics (traumatology, orthopaedics, anaesthesiology and the emergency center). Most acute patients are transported to this clinic.

There have been many attempts to reform and integrate the organization of the emergency medicine in the country. However, apart from purchasing of new

ambulance vehicles little has been done in developing a long term strategy for strengthening of the existing system. Macedonian health system still has no emergency helicopter to transport patients from different parts of the country. The current system needs significant improvements both in terms of its organizational aspects, as well as in development of training and education of health personnel. Physicians and nurses, who care for emergency patients, require a broad field of knowledge and advanced procedural skills often including surgical procedures, trauma resuscitation, advanced cardiac life support and advanced airway management. Therefore emergency medicine and nursery encompasses a large amount of general medicine but involves virtually all fields of medicine including the surgical sub-specialties. It is a unique body of knowledge that should be practiced by specially trained physicians, nurses, and other health care providers who deliver quality care as a team. In order to achieve excellence in emergency medical care it is necessary that a comprehensive and integrated educational and training system at university level be developed.

The proposed program would include these components:

- Detailed assessment of the emergency medicine system in the country
- Technical assistance for development of national strategy for emergency medicine
- Development program for continuous education in emergency medicine
- Purchasing of equipment, considering purchasing Emergency Helicopter.
- Establishment of emergency medicine as academic discipline.

Partner organizations: Ministry of health, University Clinical Center for emergency medicine, Health Center Skopje, Faculty of medicine.

## **8. Conclusions**

The health care system in Macedonia is undergoing continuous reforms. Similarly as with the other countries in the region, most of these reforms are partial, fragmented and without long-term sustainability. Clearly, most of the reforms are aligned with the interest of the politicians to promote quick successes, while clear direction and vision for strategic development of the health care system is missing. Therefore, our proposal for development of health projects in Macedonia takes another directions. To tackle systemic issues that would provide

long term and sustainable benefits for the population. The health system in Macedonia requires support and we hope that these target areas can serve as good basis for development of health project in the best interest of the population.

## 9. Annexes

### 9.1. Latest key health indicators for Macedonia

	1990	1995	2000	2005	2010
<b>Demographic characteristics</b>					
<b>Geographic area</b>	25713	25713	25713	25713	25713
<b>Population</b>	2028000	1965984	2031541	2036855	2055004
<b>Population density (pop/km<sup>2</sup>)</b>	78.87	76.46	79.01	79.21	79.92
<b>Urban (percent)</b>		59.76	59.44	59.66	57.8
<b>Life expectancy at birth. male</b>	69.98 (1991)	70.04	71.18	71.44	72.5
<b>Life expectancy at birth. female</b>	74.53 (1991)	74.48	75.74	75.88	76.14
<b>IMR per 1000 live births</b>	31.6	22.67	11.81	12.8	7.6
<b>Economic data</b>					
<b>Total GDP (in million US \$) [source: SSO]</b>		2377	3588	4534	6100 (2008)
<b>Total GDP (in million US \$) [source: MoF. WB]</b>	4471	4449	3586	5814	9189
<b>GDP per capita (in US \$) [source: SSO]</b>		1209	1771	2226	2980 (2008)
<b>GDP per capita (in US \$) [source: MoF. WB]</b>	2205	2263	1765	2854	4570
<b>Inflation rate [source: SSO]</b>	1690.7 (1992)	15.9	10.6	0.5	1.6
<b>Inflation rate (GDP deflator) [source: WB]</b>	93.7 (1991)	17.1	8.2	3.8	2.2
<b>GDP growth rate (real)</b>	-6	-1	5	-5	1.8

<b>Health care expenditures</b>	1990	1995	2000	2005	2008
<b>Public outlays as percentage of total intergovernmental budgets</b>	n/a	n/a	15.8	15.8	n/a
<b>Private out-of-pocket outlays (estimates)</b>	n/a	n/a	29.1	29.6	n/a
<b>Total health expenditures (PPP) (PPP\$ per capita)</b>	n/a	368	452	601	702
<b>Total health expenditures as percentage of GDP (WHO estimates)</b>	n/a	7.6	7.6	7.8	7
<b>Health resources</b>	1990	1995	2000	2005	2009
<b>Physicians (public)</b>	4396	4516	4455	4392	3460
<b>Physicians (private)</b>	n/a	n/a	n/a	n/a	1816
<b>Physicians (total)</b>	4396	4516	4455	4392	5364
<b>Physicians/100000 population (total)</b>	216.8	229.7	219.3	215.6	261
<b>Other health professionals (public)</b>	12838	13071	12838	11511	9994
<b>Other health professionals (private)</b>	n/a	n/a	n/a	n/a	5475
<b>Other health professionals (total)</b>	12838	13071	12838	11511	15469
<b>Other health professionals/100000 pop</b>	633	664.9	631.9	565.1	752.8
<b>Hospital beds (public)</b>	11119	10645	10248	9569	8848
<b>Hospital beds (private)</b>	n/a	n/a	n/a	n/a	335
<b>Hospital beds (total)</b>	11119	10645	10248	9569	9183
<b>Hospital beds/100000 pop</b>	548.3	541.5	504.4	469.8	446.9