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PREVENTIVE HEALTH TARGETS IN FUNCTION OF THE POPULATION HEALTH ON LOCAL LEVEL

1. Introduction

At the same time with the initiation of the idea for development of National Health Strategy 2020, the commitment of the government emerged towards the strategy's goal to improve the health and the wellbeing of population.[1] With this determination to develop a comprehensive National Health Strategy 2020, the government introduced "whole-of-government and whole-of-society" approaches. The Health insurance Fund of Macedonia (HIFM) was one of the first institutions that developed an initiative of enhancement and extension of its policies in the new direction.

This study aims to elaborate the influence of the HIFM's measures on care and improvement of the communities' public health, through the local community's perspective. Accordingly, the study should answer the following questions:

- What is the role and what kind of measures

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1 Ministry of Health (2016) *Health 2020 Strategy of the Republic of Macedonia*

on population's health were undertaken by the health insurance and the HIFM on local level, and
- What are the first results of the introduced HIFM's measures in the public health policies of the local communities

This analysis is expected to display the possibilities and to underline the significance of the new direction in the health using the "whole government" and "whole society" approaches in the implementation of the National Health Strategy, and overall in achieving the health goals and policies. Nevertheless, the elaboration of the HIFM's measures can be a role model for other institutions on national and local level, how they can be socially responsible and take actions aimed to improve the health and wellbeing of the whole society. The methodology consists of two stages:

- Finding all publicly available documents on the HIFM's measures, starting from the period of initiation of the National Health Strategy 2020, primarily in the preventive health targets but also information on the other HIFM's accompanying measures.
- Collection of data for the analysis of the measures:
  - Data from the MakStat database of the State Statistical Office, which is the data source for the estimates of the targeted population by age and municipality. Data is based on population estimates made by State Statistical Office for 2016.
  - Data from HIFM on the number of check-ups by GPs in 2016
    About the methodology of the data analysis, the adjustments of the data should be noted. The HIFM's categorization of the insured persons in the reposts is by HIFM's 30 branches that correspond to the health regions in the country. On the other hand, the State Statistical Office data on the population is published on the level of 80 territorial units-municipalities. That said, there is a difference between the population covered by the HIFM local offices and the administrative division of the country by municipalities. Given the local level aspect of the analysis, it was necessary to further disseminate the HIFM data. Having in mind all of the possibilities, structuring the number of check-ups by the address of the GPs, was chosen as the most appropriate way for this analysis. This approach was chosen, primarily for the fact that the GP's municipality is usually were the patients reside. Because of the patients possibility to change the GP during the year, the data is based on GP were the patients were registered at the end of 2016.

2. The HIFM's new role

HIFM is an institution performing activities of public interest and providing the mandatory health insurance. Having in mind HIFM's filed of activities it's essentially a financial institution with resources that dominate in the structure of the total health expenditures of the country. HIFM's funds are used to finance all levels of health care: in primary health care, the GP's, pharmacies, preventive care in the Health Centers, on secondary level the specialists ambulatory care and inpatient care in the private and public institutions and the health services provided by the University Clinics and Institutes on tertiary level.

Fulfilling the mission to provide the benefits and health services from the Basic Benefit Package, the role of the HIFM is to finance the health services on behalf of the insured persons, based on their needs. Therefore, the primary role is to finance the treatment of certain occurred medical condition.

There are numerous methods of payment that have been incorporated in health financing system, which are used by the HIFM to satisfy all health needs and to improve the quality of care, and therefore to shift toward the strategic goal of becoming a strategic purchaser of health services. The first strategic health financing method has been implemented at GP level. The health services that are delivered by the GPs on primary level are financed through combined method of capitation. In order to increase the GPs care for the patients and to improve the quality, the amount of capitation it's not just a simple multiplication of the number of patients and the value of a capitation point. The amount of the capitation is determined by two main factors: the patients' age and the total number of patients registered to the GP.

Additionally to these two factors, with the health reform on primary level, a pay for performance mechanism has been incorporated in the GP's financing. One part of the capitation is fixed (70% of the amount) and the second part is variable (30% of the amount). The variable part of the capitation is linked to the fulfillment of previously defined preventive health targets. The preventive health targets are based on preventive health services that the GP delivers to the registered patients and on the rational use of the health resources of the system.

Prevention is the most cost-effective method of maintaining the healthy population, especially when besides considering the direct health expenditures, the indirect cost on society, are taken in consideration. There are numerous of studies and facts for the importance of the prevention in the aspect of the health of the population, but more importantly in health financing aspect, the influence of the prevention in decreasing the health

costs on the higher levels of health care. The financial pressure is particularly pronounced with the non-communicable diseases, with the increasing trend, lead by growth of chronic diseases, aging of the population and the enhancement of the health technology. Based on the estimations in EU, over 70% of the health expenditures are linked to the patients with one or more chronic non-communicable diseases.

Evaluated by the indicator of disability adjusted life years (DALYs), as a measurement of years lost due to premature death or years in sickness, cardiovascular diseases, annually, are accounted for 36.4 million life years, while the diabetes of 2.6 million life years annually. On the financial side, in 2006 only the cardiovascular diseases cost the EU on wider society level, 169 billion euros. In Britain, the diabetes costs the NHS, 1.2 billion pounds annually.[2]

With the initiative to develop a new National Health Strategy 2020, and with the government's new direction in the health sector, HIFM started to develop measurements that will have innovative approach in the health policy in the country. Considering the above, the measurements should be directed mainly towards addressing the non-communicable diseases that are the largest health risk to the population's health, and the biggest financial burden of HIFM and society in treatment of the consequences. Therefore HIFM in the last period have widen its role in the system, form financing the treatment of the insured persons, towards taking care of the health of the population. Within the idea for this kind of innovative policy making and within its responsibilities and capacities, in 2014, the HIFM started the implementation of a big project for health screening of the insured persons, accompanied by several other activities that aimed to promote, expand and advance the project.

3. Health screening by the GP's

As it is stated above, with the reform of the primary health care, the GP's financing is based on a combined model of capitation and pay for performance (fulfillment of preventive health targets). The preventive health targets were subject to a continuous negotiations between the HIFM and the GPs, were the preventive activities for the next period were defined in details.

Before 2014, the GP's were focused on fulfillment of 7 different preventive

2 World Health Organization, (2014). *The Case For Investing In Public Health, The strengthening public health services and capacity, A key pillar of the European regional health policy framework Health 2020,* WHO

health targets that previously were determined with the HIFM, in the areas, from proper growth and development of children to areas of preventing malignant neoplasms (breast, prostate and colon).

Not to underestimate the results of this previous heath targets at the GPs, but they had some weaknesses, as they had various focus on different target groups and with the enhanced role in prevention of the Ministry of health, some activates were overlapping by the both institutions.

Further, the results from the analysis of the HIFM and the Institute of Public Health were clear regarding the largest cost drivers in the health system, from the most common causes of mortality and morbidity and the main risk factors in the country. Therefore, by appropriating a big share of the preventive activities in malignant diseases by the Ministry of Health, starting from 2014, HIFM decided to focus on the three most common non-communicable (chronic) diseases, which in the same time, are among the largest cost drivers in the health system.

Most common non-communicable diseases that HIFM focused its capacities for prevention are: cardiovascular diseases, kidney diseases and diabetes.

The overall HIFM prevention project was implemented in a partnership with GPs, cardiology, nephrology and endocrinology associations of doctors in the country (Macedonian cardiology association, Macedonian nephrology, dialysis, transplantation and artificial organs and Scientific Association of Macedonian Endocrinologists and Diabetologists). In cooperation with the GP's association, the implementation, the targeted activities, timeframe and the coverage of the project were defined in details. With the associations of the specialists, the questioners and the parameters (results) for risk determinations, for all 3 diseases were defined.

The screening check-ups at the GPs for the three most common non-communicable diseases started on January 1st 2014. The target population of the screening was 1.2 million people, or the healthy persons on the age from 15 to 65 years that have chosen a GP, and who will be examined in a period of 2 years.

The GPs have a commitment in the period of 2 years to undertake check-up (to invite on a check-up) on all their registered patients, or the healthy persons in the targeted age group, with an objective to determine the level of risk for diabetes, cardiovascular disease and kidney disease. Within the screening, the doctors fill out questioners based on the performed check-ups, where patients health risks (smoking, drinking, use of drugs, level of blood pressure, body mass index), are entered. Biochemical laboratory examinations, as glucose level, cholesterol level, creatinine level and protein in urine, were also conducted.

Table 1. Preventive health targets in 2013 and 2014

Preventive health targets in 2013		*New preventive health targets*		
Type of target	**Target group**	**Type of target**	**Target group 2014-2015**	**Target group 2016-2017**
Preventive activities for early detection of cardiovascular diseases	*25-65 yrs*	**Diabetes prevention**	*15-65 yrs*	*35-57 yrs*
Preventive activities for early detection of breast cancer	*Female 20-70 yrs*	**Prevention of kidney diseases**		
Anemia, preventive activities early detection of deformities	*12 mth and 14 yrs*	**Prevention of cardiovascular diseases**		
Obesities, preventive activities early detection of deformities	*5 yrs and 14 yrs*			
Preventive activities for early detection of prostate cancer	*Male 45-75*			
Asthma, preventive activities early detection of deformities	*8-18 yrs*			
Preventive activities for early detection of colorectal cancer	*50-74 yrs*			

Source: HIFM, Annual report 2013 and Preventive measures and activities in primary health care at GP's from the contracts for 2016

Depending on the results of the check-up and examinations, the GPs have a commitment to provide recommendations, to follow the health status for lower risks patients, and to refer to higher level of health care, the patients with higher risk levels.

Based on the performed screening, GPs fill out the questioners with all the findings and the calculated level of risk, which are reported in the HIFM's IT system, as they are one of the factors of the capitation calculation.

Upon the finish of the first screening period of 2 years (2014 and 2015), the second period started (2016 and 2017) with the focus on the same three non-communicable diseases, but with some adaptations of the project. With changing the previous targeted age group of 15-65 years to 35-65 years, the coverage of the population has been narrowed from 1.2 million to 664 thousand people.

Assessing, based on the HIFM's press releases on the turnout of the insured persons and the overall implementation, a fall can be noted in the examined patients in the second cycle. In the first six months of 2014, around 325 thousand patents,[3] or 27% of the targeted population (1.2 million) were examined, which means that with the same dynamics, in the next three quarters, all of the targeted insured persons, can be covered. While in 2016, in the same time period of the first six months, the GPs have undertaken the screening on 93,907 persons,[4] or 14% of the targeted population of 664 thousand people. In this case, although the target is half of the target from the first cycle of screening, GPs' performance has declined. If the same dynamics continue in the next 3 quartiles, only 56% of the targeted insured persons would be covered and the GP's wouldn't receive the funds on this basis.

These are the reasons for arising the questions: Why according to the available data for 2016, the second cycle of prevention is far below the plans and expectations? What is the difference between the two preventive programs? Is the political uncertainty reflecting on the health system, or it's just a decrease of the GP's motivation, enthusiasm and belief in the cooperation and support of the HIFM and the preventive projects?

Following is an analysis of the population (insured persons) coverage and the GP's workload of the project on annual and monthly level (as average).

Table. 2 GP's burden with the preventive health targets

	Targeted population for 2 years	Number of GP's	Projected number of average annual check-ups per GP	Projected number of average monthly check-ups per GP
First two year cycle 2014-2015	1,200,000	1,532	392	33
Second two year cycle 2016-2017	664,000	1,471	226	19

With the preventive programs, 33 screenings a month, were planned for the period 2014-2015, and 19 screenings were planned in the period 2016-

3 HIFM (2014), Press release, *Prevention for heart diseases, kidney diseases and diabetes,* available at: http://www.fzo.org.mk/WBStorage/Files/Soopstenie%20za%20prevencija%20maticni.pdf

4 HIFM (2016), Press release, *Preventive check-ups at GPs, For six months examined over 93 thousand insured persons,* available at: http://www.fzo.org.mk/WBStorage/Files/Soopstenie%20za%20preventivni%20celi%20i%20edukativen%20%20materijal%2026-7-2016%20docx.pdf

2017, by every GP to perform on his healthy insured persons, in order to evaluate and to inform the patients on the three chronic diseases.

Table 3 shows the results in the first 6 months from the both preventive programs, or screened patient as percent of the total targeted population.

Table. 3 Coverage of the targeted population with a preventive health targets

	Targeted population for 2 years	Number of check-ups in the first 6 months of the program	% of screened persons form the targeted population for the first 6 months of the program
First two year cycle 2014-2015	1,200,000	325,000	27.08%
First two year cycle 2016-2017	664,000	93,907	14.14%

The analysis confirms that the progress dynamics of the second preventive program are slower in absolute and in relative terms.

As shown in tables 1, 2 and 3, there are qualitative and quantitative differences between the two projects. In the new program, the targeted population is halved, or it differs in the age structure: the children and adolescence under 35 are excluded (although the prevention for the three diseases should start from as young as possible) and also persons from 57 to 65 years (although on that age with a disciplined healthy life style, the diseases and complications can be postponed).

It can be concluded that the second preventive program is less ambitious from the first. However it should be noted the HIFM's and GP's efforts in the new approach towards the healthy population are affecting the population's awareness and education, and more importantly the identification the early signals or potential risks of the three most common diseases.

For the first six months of 2014, the GPs covered 325,000 persons with the screening. Based on the HIFM's press releases, the GPs found:

- Risk of heart diseases at 55,000 persons
- Risk of diabetes and diabetes at 45,000 persons
- Risk of kidney diseases at 12,000 persons

For the patients where some of this diseases, has been early detected, the main therapy is based on several principals:

- Healthy diet, regular physical activity,
- Healthy habits,
- Following the medical personal recommendations.

Beside early detection of these three diseases, an objective for this project is also to getter data for health statistics for the insured persons from 14 to 65 years old. The first published data is worrisome, especially for the young population. In the age group 14-24 old, around 27.1% (30.000) were smokers (internationally 22% and falling), and 0.1% were drug users.

Out of 325.000 persons, the GP's in the first six months, identified the following chronic patients:

- 30.8% (100,000) persons with cardiovascular diseases,
- 4.7% (15,000) with kidney diseases,
- 21% (68,000) with diabetes.

Out of the screened 325.000 persons, if they do not improve the care of their health, in the next 10 years: 9,000 persons will suffer from kidney failure (on dialysis), 14,400 persons will develop insulin dependent diabetes and 2,000 premature deaths will be caused from fatal cardiovascular episode (heart attack and stroke).[1]

For the first six months of 2016, the GP's have screened 93.907 insured persons on the age from 35 to 56 years. According to HIFM's press releases, the results are:

- From heart diseases, 42,982 female and 12,928 male have low risk level, 21,600 male and 11,200 female have intermediate level of risk, and high risk level of cardiac arrest in the next ten years have 172 male and 1 female.
- From kidney diseases, 93.538 persons have low risk level, 368 have intermediate level of risk and 1 person has a high risk.
- From diabetes, 75,540 persons have low risk level, 12,294 persons have intermediate level of risk and 242 persons have high risk level.

Interesting indicator is that 6,708 persons have a high body mass index (BMI) of over 30 index points, or are overweight. Out of 256 persons, were doctors doubted to have hidden diabetes and were referred to oral glucose tolerance test, 105 are diagnosed with diabetes and 38 have pre-diabetes condition.

Further, in the first six months of 2016, the GP's were visited by 14,144 chronic patients diagnosed with cardiovascular diseases (patients with heart attack and stroke, patients with stent implantation, patients with clogged arteries, etc.) 1,056 patients diagnosed with severe kidney disease and 19,349 patients with diabetes.

5 ФЗОМ (2014), Соопштение, *Превенција од срцеви заболувања, бубрежни заболувања и дијабетес,* [HIF (2014), Press release, *Prevention of cardiovascular diseases, kidney diseases and diabetes*], available at: http://www.fzo.org.mk/WBStorage/Files/ Soopstenie%20za%20prevencija%20maticni.pdf

This are some available sections from the HIFM's press releases for the first six months, form the both cycles. A great interest for the scientific community would be to see the final results from the both screening cycles in order to analyses and adjust the health sector on medium and on long term, and also to determine the national priorities in facing and engaging a healthier nation (promotion of sport, healthy diet etc.). Having in mind there is no complete data on the first preventive cycle in the following part of the study, the analysis is focused on the second cycle, on the first year of its implementation (2016).

3.1. Coverage of the local population

As in other analyses which include data on the number of the population, its necessary to note that the used data from the State Statistical Office are estimations based on the last census from 2002, the fertility and mortality of the population.

As mentioned in the methodology, the data for the performed check-ups are from 2016, and are disaggregated on the municipality were the GP has registered its practice and the estimations for the population between 35 and 56 years old, which have been published by the State Statistical Office. The presented data on the number of examined persons are from the HIFM's system, or more precisely from the filled questioners from 1,532 GPs with an active contract with the HIFM in 2016.

From the HIFM's data for 2016, the GPs have performed 196,121 preventive check-ups, or on 29.5% of the targeted population of 664,000 people which should be covered with the screening during 2016 and 2017. If during 2017, the same dynamic of implementation is maintained, round 61% of the population form 35 to 56 years will be covered.

By a statistical region, the highest coverage of the population in 2016, has the Vardar region, were in the first year of this cycle, 35% of the population have been covered. On the other hand, the lowest coverage of population is in the Southwest region with 27% of the population examined.

On municipality level, there is a wide range in the level of coverage of the population in the age group from 35 to 56 years. The municipality of Demir Hisar has the highest level of coverage in the country with 51%, and the second is municipality of Vevchani with 50% of the population examined in the first year of the cycle. On the other hand, the lowest level is in municipality of Zrnovci with only 4% and in municipality of Arachinovo with 6% of the population in the target age group covered.

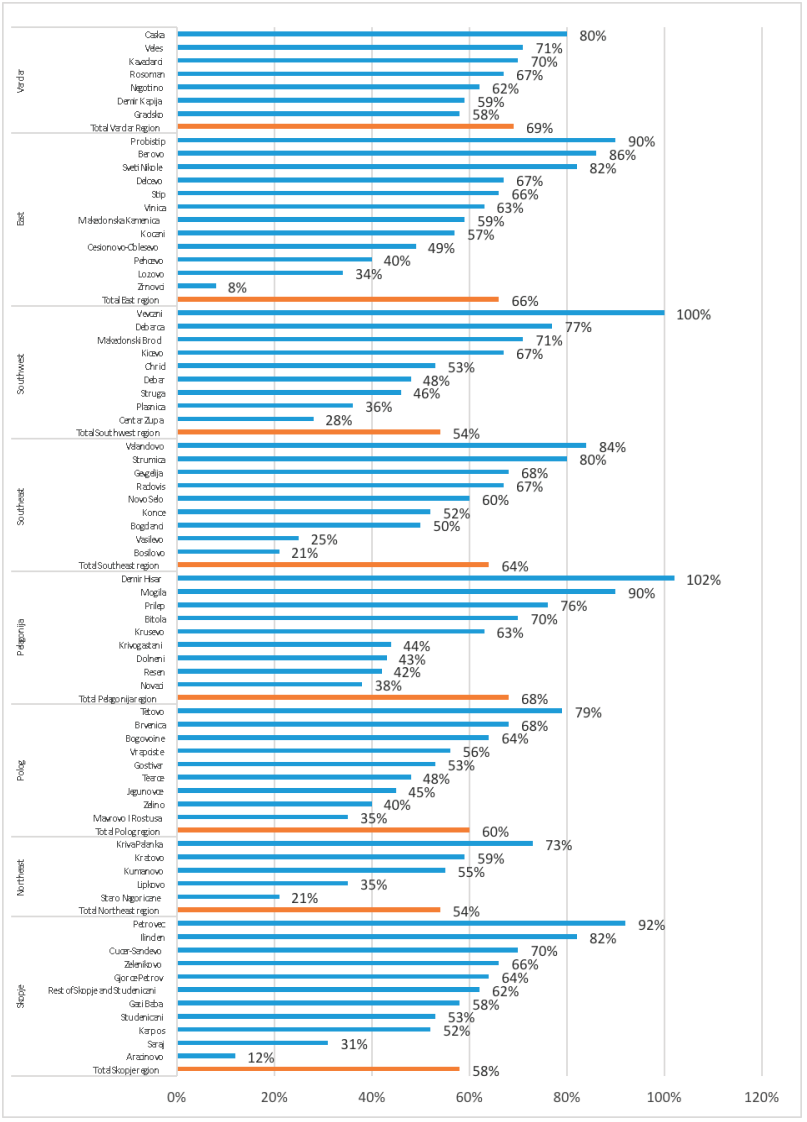

Figure 1. Screening coverage by region and by municipality, 2016

In the East region, in total, the screening has been done on 20,650 persons, which is 33% of the population or a 66% fulfillment of the target for the first year. On municipality level, the highest coverage is in Probishtip, were 45% of the population is screened, while the lowest rate is municipality Zrnovci,

which is one of the smallest municipalities by inhabitants, with a screening on only 4% of the population.

Table 4. Coverage by municipalities in the East region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Berovo	*1,718*	*3,988*	*43%*	*86%*
Ceshinovo-Obleshevo	*528*	*2,167*	*24%*	*49%*
Delchevo	*1,738*	*5,223*	*33%*	*67%*
Kochani	*3,441*	*11,990*	*29%*	*57%*
Lozovo	*143*	*831*	*17%*	*34%*
Makedonska Kamenica	*753*	*2,573*	*29%*	*59%*
Pehchevo	*305*	*1,508*	*20%*	*40%*
Probishtip	*2,175*	*4,855*	*45%*	*90%*
Sveti Nikole	*2,301*	*5,615*	*41%*	*82%*
Vinica	*2,038*	*6,423*	*32%*	*63%*
Zrnovci	*39*	*987*	*4%*	*8%*
Shtip	*5,471*	*16,694*	*33%*	*66%*
Total	**20,650**	**62,852**	**33%**	**66%**

The coverage with the screening in the North-east region, together with the South-west region, is the lowest in the country with 27% of the people from the total population, that have been on examination at the GP. The highest coverage in this region is in the municipality Kumanovo with 28% of the population, and the lowest level in municipality Staro Nagorichane, were out of 1,103 persons on the age from 35 to 56 years, 114 have been screened.

Table 5. Coverage by municipalities in the Northeast region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Kratovo	*890*	*3,025*	*29%*	*59%*
Kriva Planka	*2,790*	*7,601*	*37%*	*73%*
Kumanovo	*9,410*	*34,016*	*28%*	*55%*
Lipkovo	*1,537*	*8,767*	*18%*	*35%*
Staro Nagoricane	*114*	*1,103*	*10%*	*21%*
Total	**14,741**	**54,512**	**27%**	**54%**

The Vardar region, with 35% coverage of the target population, has the highest coverage level. Within the region, the highest share of 40% of pop-

ulation screened is in the municipality Chashka, while the lowest level of the screening is municipality Gradsko with 29% of the defined age group.

Table 6. Coverage by municipalities in the Vardar region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Demir Kapija	*384*	*1,294*	*30%*	*59%*
Veles	*6,114*	*17,205*	*36%*	*71%*
Chashka	*839*	*2,085*	*40%*	*80%*
Gradsko	*329*	*1,128*	*29%*	*58%*
Kavadarci	*4,379*	*12,498*	*35%*	*70%*
Negotino	*1,898*	*6,151*	*31%*	*62%*
Total	**13,943**	**40,362**	**35%**	**69%**

With 27% coverage in 2016, the Southwest region is one of the two regions with the lowest coverage of the population with preventive check-ups. On municipality level, in the municipality Vevchani, the highest share of population have done preventive check-ups, were the target for the first year of the cycle of covering the half of the population is fulfilled, and the lowest rate of screening is in municipality Centar Zupa with 14% coverage of the population in the defined age group.

Table 7. Coverage by municipalities in the Southwest region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Centar Zupa	*320*	*2,314*	*14%*	*28%*
Debar	*1,533*	*6,365*	*24%*	*48%*
Debarca	*456*	*1,184*	*39%*	*77%*
Kicevo	*6,325*	*18,768*	*34%*	*67%*
Makedonski Brod	*702*	*1,967*	*36%*	*71%*
Ohrid	*4,242*	*16,028*	*26%*	*53%*
Plasnica	*263*	*1,478*	*18%*	*36%*
Struga	*4,677*	*20,513*	*23%*	*46%*
Vevcani	*393*	*789*	*50%*	*100%*
Total	**18,911**	**69,406**	**27%**	**54%**

In the Southeast region, during the 2016, 32% of the population have been covered, or by municipalities, with 42% the highest is the share of screened persons in Valandovo, while the lowest percentage of covered population of 10% is in Bosilovo.

Table 8. Coverage by municipalities in the Southeast region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Bogdanci	*928*	*3,714*	*25%*	*50%*
Bosilovo	*466*	*4,486*	*10%*	*21%*
Gevgelija	*2,523*	*7,450*	*34%*	*68%*
Konche	*291*	*1,120*	*26%*	*52%*
Novo Selo	*1,069*	*3,565*	*30%*	*60%*
Radovish	*2,982*	*8,907*	*33%*	*67%*
Strumica	*7,146*	*17,838*	*40%*	*80%*
Valandovo	*1,582*	*3,776*	*42%*	*84%*
Vasilevo	*496*	*4,038*	*12%*	*25%*
Total	**17,483**	**54,893**	**32%**	**64%**

The coverage level in Pelagonija region for the first year of the cycle is 34% out of the targeted population. The highest percentage of examined persons is in the municipality Demir Hisar with 51%, which is even above the target for the first year, and the lowest share of examined with 19% is in municipality of Novaci.

Table 9. Coverage by municipalities in the Pelagonija region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Bitola	*9,850*	*28,255*	*35%*	*70%*
Dolneni	*886*	*4,144*	*21%*	*43%*
Krivogashtani	*370*	*1,701*	*22%*	*44%*
Krushevo	*856*	*2,730*	*31%*	*63%*
Mogila	*836*	*1,864*	*45%*	*90%*
Novaci	*177*	*920*	*19%*	*38%*
Prilep	*8,736*	*23,116*	*38%*	*76%*
Resen	*1,067*	*5,038*	*21%*	*42%*
Demir Hisar	*1,300*	*2,541*	*51%*	*102%*
Total	*24,078*	*70,310*	*34%*	*68%*

The total coverage with the screening of the non-communicable diseases in the Polog region is 30%, or the highest percentage of screened population is in municipality Tetovo with 40%, and the lowest in municipality Mavrovo I Rostusha of 17%.

Table 10. Coverage by municipalities in the Polog region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Brvenica	*1,747*	*5,157*	*34%*	*68%*
Gostivar	*7,321*	*27,614*	*27%*	*53%*
Jegunovce	*759*	*3,360*	*23%*	*45%*
Mavrovo I Rostusa	*493*	*2,820*	*17%*	*35%*
Tearce	*1,842*	*7,655*	*24%*	*48%*
Tetovo	*11,334*	*28,606*	*40%*	*79%*
Vrapciste	*2,527*	*8,948*	*28%*	*56%*
Zelino	*1,721*	*8,652*	*20%*	*40%*
Total	**27,744**	**92,812**	**30%**	**60%**

In the region of the capital Skopje and the municipalities that surround the capital, 57 thousand preventive check-ups have been done, or 57% of the total number of check-ups that have been done in the country. However, the coverage level in the region is 29%. According to the population data from State Statistical Office, there are no available individual data for all municipalities, or in the classification of the State Statistical Office, part of the municipalities are grouped (Aerodrom, Butel, Kisela Voda, Centar, Chair, Shuto Orizari and Sopishte). However, from the available data, the highest is the coverage level in municipality Petrovec with 46%, while the lowest is the coverage level in municipality Arachinovo with only 6% in 2016.

Table 11. Coverage by municipalities in the Skopje region

Municipality	Screened people	Population 35-56 yrs	Coverage level	Fulfillment of the target for the first year
Arachinovo	*237*	*3,834*	*6%*	*12%*
Gazi Baba	*7,004*	*24,310*	*29%*	*58%*
Gorche Petrov	*4,319*	*13,444*	*32%*	*64%*
Karposh	*5,138*	*19,776*	*26%*	*52%*
Saraj	*1,951*	*12,459*	*16%*	*31%*
Chucher-Sandevo	*1,036*	*2,947*	*35%*	*70%*
Ilinden	*2,193*	*5,378*	*41%*	*82%*
Petrovec	*1,259*	*2,737*	*46%*	*92%*
Studenichani	*1,561*	*5,934*	*26%*	*53%*
Zelenikovo	*442*	*1,347*	*33%*	*66%*
Rest of Skopje and Sopishte	*31,657*	*102,071*	*31%*	*62%*
Total	*56,797*	*194,236*	*29%*	*58%*

4. Other measures in taking care for the health status of the insured persons

As it is stated above the new approach of the HIFM, it's not just a change in the preventive health targets at the GPs, although they are the main element. Within the new role that the HIFM has took, the new approach incorporated a new comprehensive way of performing the prevention with a whole set of measures. Even in the planning of the new approach, numerous measures and activities were planned, which the HIFM will introduce together with the implementation of the preventive measures. Because of the fact that the explained screening belongs in the group of secondary prevention, the other measures had the objective to complete the picture of the HIFM's preventive activities, and they were to some degree directed towards primary and tertiary prevention. In other words, this measures had an objective to promote health and healthy habits on one hand, and to continue the care for the health status of persons that have some degree of risk of a non-communicable disease, on the other hand.

4.1. Care for the people with a chronic disease

One of the set tasks within the formulation of the new measures for care for the insured persons was to find a way to continue the care for the patients that have been screened for the most common non-communicable diseases. The early detection of a disease has an immense significance for the system, but the same level of significance has the risk setting of someone's possibility to obtain one of the three most common non-communicable diseases. In this way the persons are becoming aware of the disease that have been detected in early stage or for which they have a risk to obtain, and based on that, they take activates and measures in their lifestyle to increase the care of their own health. These recommendations are provided by the GPs and the specialists, after the performed process of screening.

According to many findings from various research and the information from the doctors that were included in the development of the HIFM's measures, beside the early detection of one disease, it is especially important the adherence of the doctors recommendations for taking care for the persons own health, regularly taking the prescribed medications and adherence to the recommended check-ups and other examinations. Therefore, in the new approach it was necessary to include measures for the tertiary prevention, or measures that have effect on slowing or stopping the progressions of the diagnosed disease.

Having the records form the all patients diagnosed from one of the three

non-communicable diseases (cardiovascular, kidney and diabetes), in the IT system, the HIFM started a project for continuation of the care for the diagnosed patients with a chronic disease. One year after the start of the new prevention project, in 2015, when all preconditions were meet, the HIFM started to communicate directly with the patients with a chronic disease. The target population for this part is 154,531 persons recorded by the system, that have at least one of the three non-communicable diseases.

The HIFM has 860 employees,[6] across the 30 regional offices in the most of the cities though the country. Part of the employees has some level of medical education (general practitioners, pharmacists, dentists or medical high school). Utilizing the available human capacities of the institution, 10 teams were formed throughout the regional offices, based on the concentration of registered patients and the distribution of HIFM's human resources. The teams were distributed in the larger HIFM's regional offices in Skopje, Tetovo, Shtip, Bitola, Strumica, Prilep and Kumanovo.

This employees started to contact the patients witch are recorded in the HIFM's system as diagnosed with a non-communicable disease, to remind them about the check-ups that they should visit regularly and to inform them about the complexity of the disease, in order to prevent the disease progression. Based on that, beside the care for the health status of the insured persons, this project aims in health education of these persons, within the HIFM's medical capacities.

According to the HIFM's press releases for a period of one year (part of 2015 and 2016), the teams have contacted 58,639 patients[7]. The HIFM continues to implement the project for the third year, but there is no available information about the contacted patients and the effects of the project.

4.2. Other measures in taking care for the health of the insured persons

Parallel to the leading prevention project and the continuation of care for diagnosed patients, as part of the HIFM's preventive measures, there were two more accompanying smaller activities in the care of the health of the population:

- Within the first cycle of preventive check-ups (2014-2015), the HIFM provided brochures that were distributed by the GPs, to their patients. The brochures were on the three diseases that are subject of the

6 HIFM, (2017), *Annual report for 2016*, HIFM, Skopje

7 HIFM,(2016), Press release, available at: http://www.fzo.org.mk/WBStorage/Files/Soopstenie%20za%20najnovi%20rezultati%20od%20kol%20centarot%2027-9-2016.pdf

screening: cardiovascular, kidney and diabetes. They were prepared in a cooperation with the associations of doctors and patients, as a reminder for the chronic patients for their everyday behavior regarding the disease and about the regular examinations that they have to do to prevent the progression of the disease. Also they are an informative material about the severity of these diseases for the other insured persons. According to the press releases[8], on total there were 350,000 flyers distributed through the GPs, or 180,000 for diabetes, 150,000 for cardiovascular diseases and 10,000 for kidney diseases (2015-2016).

- Elderly persons are one of the most affected population groups by these three non- communicable diseases. This is the reason why HIFM, for this population, in partnership with the Union of Pensioners' Associations of Macedonia (SZPM), since 2014, started organizing educational workshops throughout the country. For a period of two years, a workshop was organized in every town in the country. The workshops were in one part focused on the rights from the health insurance and in the second part was the education of how to take care of their own health and how to prevent the three most common non-communicable diseases: cardiovascular, kidney diseases and diabetes.

5. Conclusion and recommendations

One of the biggest global health challenges is the containing of the non-communicable diseases. In 2015 they are responsible for round 70% of deaths globally, out of witch 38% are premature deaths from this diseases, on the age from 30 to 70 years. Most of the premature deaths, or round 15 million, globally can be prevented or postponed, on annual level. The leading role in facing this challenge is played by the health sector policies. But, the health policies alone can achieve very little in comparison with a joint participation of all sectors, or even wider with participation of the whole society. This are the reasons why the comprehensive approach has been adopted by the European Policy Framework for Health and Wellbeing Health2020 of WHO, and the same principal is the fundament of the National Health Strategy 2020 in Republic of Macedonia.

8 ФЗОМ, (2014), Презентација: *Први резултати од спроведувањето на новите превентивни цели кај матичните лекари, http://www.fzo.org.mk/WBStorage/Files/prezentacija%20na%20celi.ppt*

HIFM's prevention project, from 2014, was a new and different approach from the health polices started and finished in the past. The project focused on a three non-communicable diseases that were subject of the screening to the whole population, which was completed with accompanying measures and activities that aimed to promote and advance the project. With defining the coverage goal to the whole healthy population in Macedonia, that is registered to a GP, this project has become the most massive health project in the history of health insurance in the country, and received even more attention for the goal to promote the populations good health.

This HIFM's policy has emphasized the diseases that are the biggest threat to the population's health, but also on the diseases that consume the largest shares of the health funds in treating the consequences. All of that provides a way for the strategic purchaser of services in the system, to direct higher share of the health funds in the primary health services. On the other hand, the new policy, positions the GP's in the center of the system of taking care of the patient's health status, which further increases and emphasizes the role of the GP as a pillar in the whole health system.

Despite the prominent positive aspects of this project there are some disadvantages that have arisen from its implementation, and that require active work together with the GPs on addressing them and further improvement of the preventive role that the primary health providers have. The biggest obstacles in successful implementation of the project are the administrative burden, and the high level of workload based on patients visits. These problems, for long period have been high on the agenda of the professional associations for changes, in their negotiations with the health policy makers. According to the research of Healthgrouper, before the implementation of the IT reforms (My Appointment and the IT centralization in the HIFM), the administrative burden took 40% of the doctors' time planned for the patient examination[9]. On the other hand, there is still existing problem of the large number of patients visits (mostly for repeating unnecessary exams, from certain number of patients, as measuring blood pressure, body temperature, consultations etc.) as a reason why the GPs request an introduction of a minimal amount of copayment at GPs,[10,11] how a rationalization of the GP's time and patients visits, would be achieved.

9 Healthgrouper (2012). Short report, The GPs spend more than 40% of the patients time on administrative documentation, preliminary results.

10 ZPLRM (2017), Press release, *Macedonians visit the GP 2-3 times a day, in EU not that much on monthly level*

11 ZPLRM (2012), Press release, *20 MKD for a check-up at GP*

Thus, despite their support in the project implementation, were they participated as partners and creators, the anecdotal evidence indicate that due to the administrative burden and the workload, they don't pay enough attention in filling out the prevention forms, especially the risk factors (smoking, alcohol, diet etc.). This fields in the form, together with the results from the echo and the laboratory results, carry certain number of points, based on which the patients risk is categorized for the screened disease. Therefore the most important recommendations for the further implementation and improvement of the project would be in direction of improving the data for the preventive health goals:

- Finding mechanisms that would contribute to an increased motivation (bonuses and awards) of the GPs that successfully do the prevention. Those are the GPs that correctly and completely fill out the forms; the GPs that based on certain indicators have more patients who after the risk identification, by the care received from the GP and the good behavior, prolong the disease complications, versus those GPs whose patients despite the early diagnosis of the risk for the diseases have faster progression and deterioration of the health status; the GPs that covered higher share of the patients with the screening, versus those who justified the capitation with a send invitation for preventive check-up, and not with a performed check-up etc.
- Strengthening the role of the nurse in the care for the patient, with a declarative pointing the obligation to fill the preventive forms, in the HIFM's contracts.
- Improving the HIFM's control mechanisms regarding the accuracy and completeness of the forms.
- Organizing regional workshops for the GP's, were the results from the prevention would be presented, and would be compared based on coverage by GP's and by municipalities, and as a reminder for the importance of their role and in general for the health prevention of their patients. This kind of workshops would be an opportunity to foresee the problems that the GP's are facing, and also to exchange experience and to come up with proposals to improve the project.

Further recommendations in the direction of the overall improvement of the project, and its success, and also for increasing of the population attendance to the screening, are:

- Finding a way to include the specialists in the process of prevention of the three diseases (measures, indicators, incentives).
- Conducting a broader national campaign for the three diseases, to inform the population about the diseases, about the project and to attend

the preventive screening at the GP, when they receive an invitation.

- To consider the possibility to abolish the invitation as a way to fulfill the target or to be valued less (for example 1/10 of the value of a completed prevention), as the GPs would be motivated to examine the patients, not just to invite them.

For this project except few press releases, there are no indebt analyses for its implementation. Having in mind all the data that is collected with the screening, the statistics are a foundation for developing exhaustive reports for presenting the numerous indicators, but also the results from the project implementation.

Considering the elaborations throughout the paper, the last recommendation would be to continue the overall successful project, but with a commitment to its continuous improvement, as it would contribute to the National Health Strategy 2020 goal to improve the health and the wellbeing of the population.

Abstract

The control over the non-communicable diseases is taking a central role in the health systems priority setting. Low and middle-income countries are most affected of the growing prevalence of non-communicable diseases with taking the top positions in the most common causes of death. Therefore, the non-communicable diseases are in the health focus of the Sustainable development Goals (SDGs), where 193 countries have committed to decrease by third the premature death caused by non-communicable diseases, till 2030. Macedonia, as a country in the upper-middle income level, is a part of this trend of domination of the non-communicable diseases in the rates of mortality and morbidity, however with the National Health Strategy 2020 started to work towards achieving the SDG target 3.4. Addressing these ongoing trends has become a challenge that requires an integrated approach. The health financing system provides this kind of mechanisms, which in the primary health care were initiated in Macedonia using the local capacities of the health insurance system and the GPs, in order to improve the health of the local communities.

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