Policy Study No. 21

Analysis of the public spending on health care of children in the country

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ANALYSIS OF THE PUBLIC SPENDING ON HEALTH CARE OF CHILDREN IN THE COUNTRY

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Reviewer
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December, 2018

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1. INTRODUCTION

The right to good quality health care is a basic children's right, and governments are obliged to respect, protect and fulfil this guaranteed right (UN, 1990). Children's health takes a special place in the Sustainable Development Goals. The special emphasis on child protection is also reflected in the Constitution, which defines that the state shall particularly protect mothers, children and minors (Parliament, 1991), which also provides the basis for the Child Protection Law and the special treatment of children in other regulations in the country.

Health is a resource enabling the individual to realise his/her potential in the overall development of society. Therefore, it is particularly important to take care of people's health from the very beginning of life. Considering the link between health care and the level of health expenditure, funds for children's health care are particularly important from an economic and social aspect. Thus, health expenditure directly or indirectly impacts on children's health and their quality of life at a different age. Children's wellbeing and development are essential to the economic and social development of the country. Hence, investments in their wellbeing, stability, education and health should be a national priority.

The Government allocates and realises the budget funds based on the national priorities set. However, it is not always clear how the national priorities are defined, how the funds are allocated in the Budget of the country, how public money is spent and what effects are achieved from these expenditures. The purpose of this study is to give an overview of the public spending related to children, in the health care segment.

The health system in the country, from a financial aspect and access to the system, is based on compulsory health insurance. The system thus set up gradually, throughout the years, strives to achieve universal health coverage, enabling as much of the population as possible to be covered by health insurance and, at the same time, taking into account the financial protection when using the health system services. The largest share of public expenditure comes into the system through the Health Insurance Fund of Macedonia, which has as its basic source of funding the health insurance contributions. Some of the public expenditure on health care are allocated from the Central Budget, or through the Ministry of Health, which is financing the health care of the population through preventive and curative programmes. In addition to the public health expenditure, a large share in the structure of health expenditure is covered by the private funds paid by the population when using the health services.

In 2017, the Government spent EUR 65 million on children for health care.

This study, first, addresses the total funds for health care in the country, covering all population groups, and comparing the basic parameters with other countries. Special focus is placed on the policies in the health financing system dedicated to children and their health. Namely, for the first time, we are analysing what share of the public health expenditure concerns the children in the country, what its trend was over the years, or what priority level is given to children's health care in the system. Also, for the first time, based on some assumptions, due to the limited public data, we estimated what share of private payments is actually out-of-pocket payments for the child population.

2. ANALYSIS OF THE FUNDS FOR HEALTH CARE

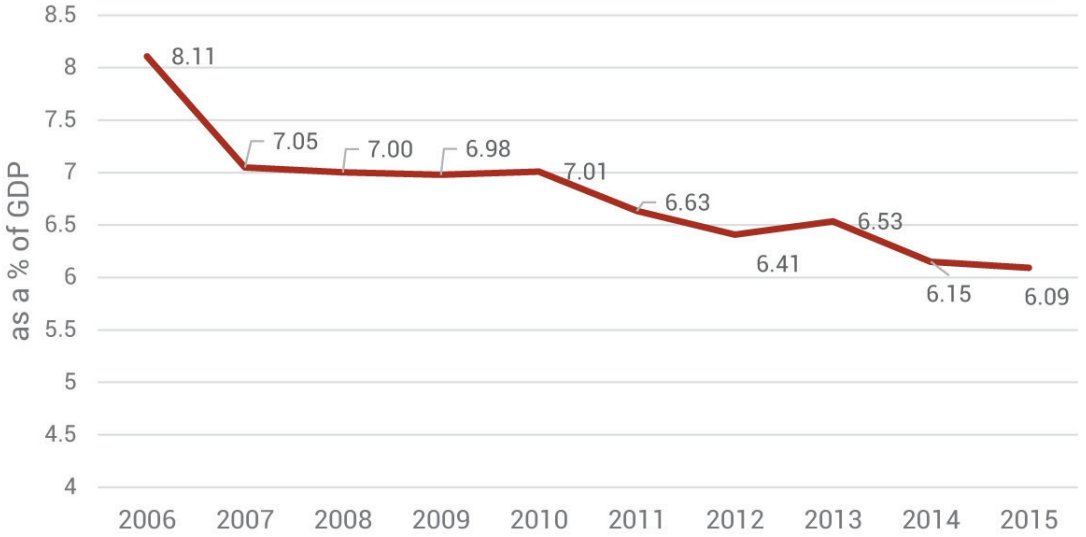
2.1. Total funds for health care

The total funds for health care cover all current funds used to finance health care in the country, or public expenditure, private expenditure and funds from external sources (Table No.1).

The share of public health expenditure (funds of the Ministry of Health and the Health Insurance Fund) in the total expenditure for health care increased from 58.5% in 1995 to 64.05% in 2015 (Table 1). On the other hand, the private health expenditure decreased from 41.5 to 35.6% in the same period. At the same time, the public health expenditure as a % of GDP note a downward trend in the country, and the same is true of the public health expenditure versus the total public expenditure.

It is important to mention that as regards all data concerning out-of-pocket expenditure on health, its source are surveys and estimates, and that is why there is some level of uncertainty in this part of the data published by WHO. However, considering a system of national health accounts has still not been set up in the country, this estimate by WHO is the only relevant indicator about the amount of out-of-pocket health expenditure in the country.

Graph No. 1 Total health expenditure as a % of GDP, 2006-2015



Source: WHO, Global Health Expenditure Database

In the country, the total funds in the health sector in the last 10 years cover from 6 to 8 percent of GDP, with a downward tendency (Graph No.1). Namely, in the last available year for international comparison (2015), the total funds for health care are 6.1% of GDP, which is the lowest level in the analysed period.

Table No. 1 Trends in health expenditure

Expenditure	1995	2000	2005	2010	2015
Total health expenditure per capita, PPP (in USD)	423	520	637	797	857
Total health expenditure as % of GDP	8.5	8.8	8.35	7.09	6.1
Public expenditure on health as % of total expenditure on health	58.5	57.5	58.88	62.82	64.05
Out-of-pocket payments on health as % of total expenditure on health	41.5	42.5	39.7	36.51	35.57
Public expenditure on health as % of total public expenditure	13.7	14.8	14.48	13.45	12.13
Public expenditure on health as % of GDP	5	4.8	4.9	4.4	3.9
Voluntary as a % of total expenditure on health	\	\	\	\	0.0
Voluntary as a % of out-of-pocket payments on health	\	\	\	\	0.0

Source: World Bank Open Data (October 2018)

Table No. 2 Structure of the total funds for health care

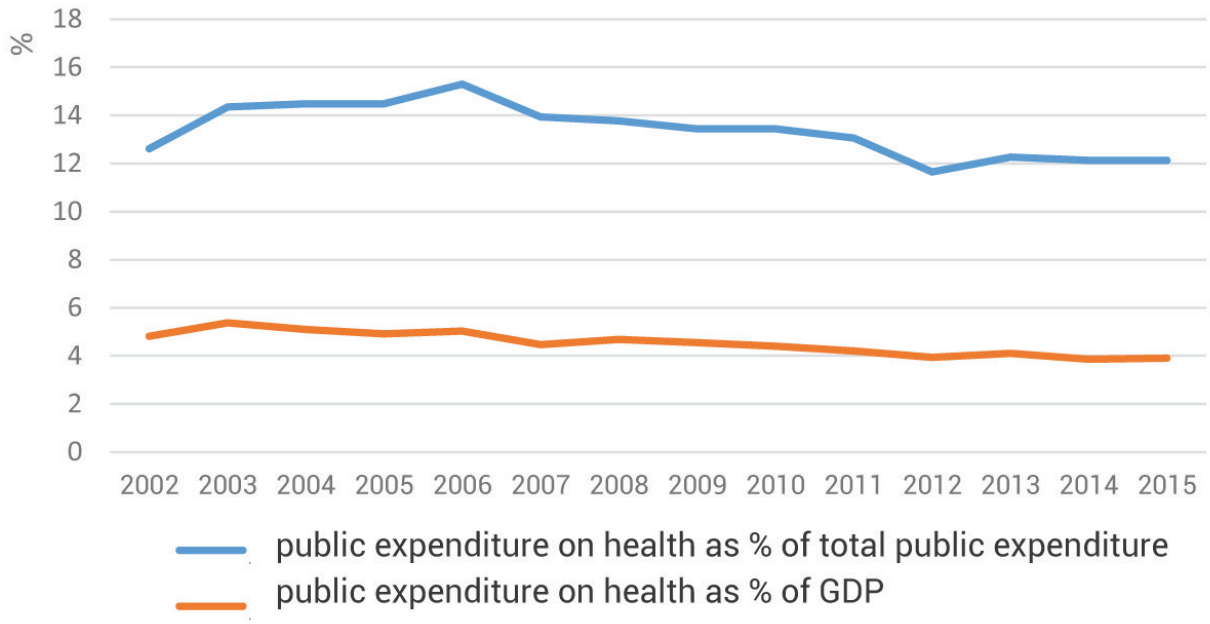
	1995	2000	2005	2010	2015	2016
External funding sources as a % of total expenditure on health	1.5	2.8	1.4	0.7	0.4	0.08
Public expenditure on health as a % of the total expenditure on health	58.1	54.9	58.9	62.8	64	64.7
Out-of-pocket payments as a % of the total expenditure on health	40.5	42.3	39.7	36.5	35.6	35.2

Source: WHO 1995-2015 /The data for 1995 are estimates of the authors based on the methodology used by WHO, and information available from HIFM, SSO, OECD, UNECE

It is expected that the funds from external sources infused into the country's health care through donors and donor agencies will note a decline as the country develops. In the country, these funds come mostly through the programmes of the Global Fund to Fight Aids and Tuberculosis.

Graph No. 2 shows the indicator of public health expenditure versus the total public expenditure in the country. This indicator shows the priority given to health care in the allocation of public expenditure available to the country. If the movement of both indicators is compared, it shows a given correlation in the movement up to 2005, after which the drop in the second indicator (in relation to the total public expenditure) is smaller than the drop in the funds for health care in relation to GDP. After 2009, certain stability is noticed in both indicators, i.e. the funds for health care in relation to GDP have approximately the same level, and the same priority level is given to health care in the allocation of public expenditure.

Graph No. 2 Public expenditure on health as a % of GDP and as a % of total public expenditure



Source: WHO 1995-2014

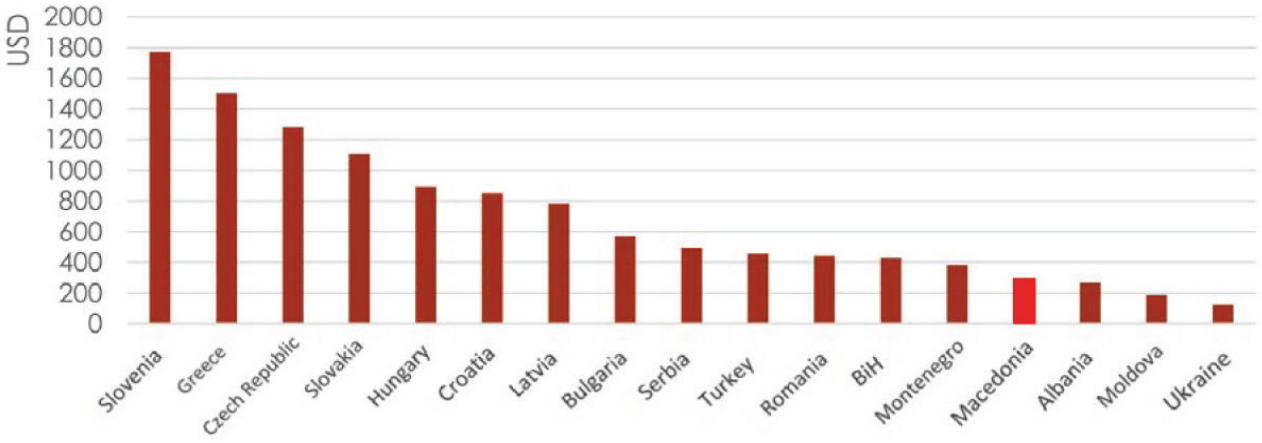
2.2. Comparison with other countries from a financial aspect

Graph No. 3 compares the total spending on health care per capita in the countries of Central and Southeast Europe. Around one third of the countries from Central and Eastern Europe, Caucasus and Central Asia spent less than USD 500, the second third spent between USD 500 and 1000, and the last third spend more than USD 1000 per capita.[1,2], The country is ranked in the first third, with a cost per capita of USD 295 (Graph No. 3). However, there are significant differences between the countries in the first group and those in the last group in the total spending on health, which is also directly linked to the level of economic development. The great variation in health expenditure also directly affects the coverage of the primary health package, and thus there are vast differences in the realisation of the health objectives between the countries.

Similarly, the ratio between the public and private spending on health care significantly differs from country to country. The general trend is that the poorer countries have a higher share of private spending on health care, while in the wealthier countries, health care is more financed by public funds (Graph No. 4). The country belongs to the group of countries that is dominant in this Graph, where public health expenditure prevails in the total health expenditure.

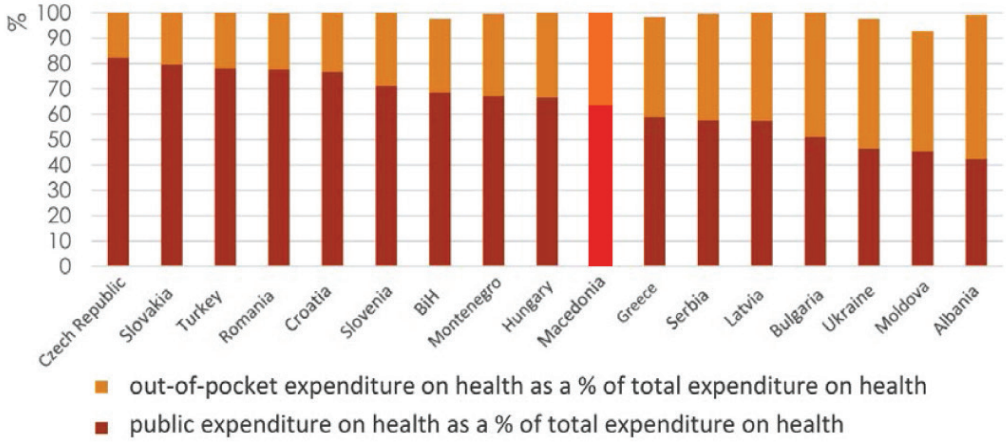
If we analyse the indicator for the total public spending on health care in relation to the countries' GDP (Graph No. 5), it is evident that there are huge variations. The country is among those countries having the lowest

Graph No. 3 Total spending on health care per capita for 2015 (in USD)



Source: World Bank, July 2018, world development indicators (2018)

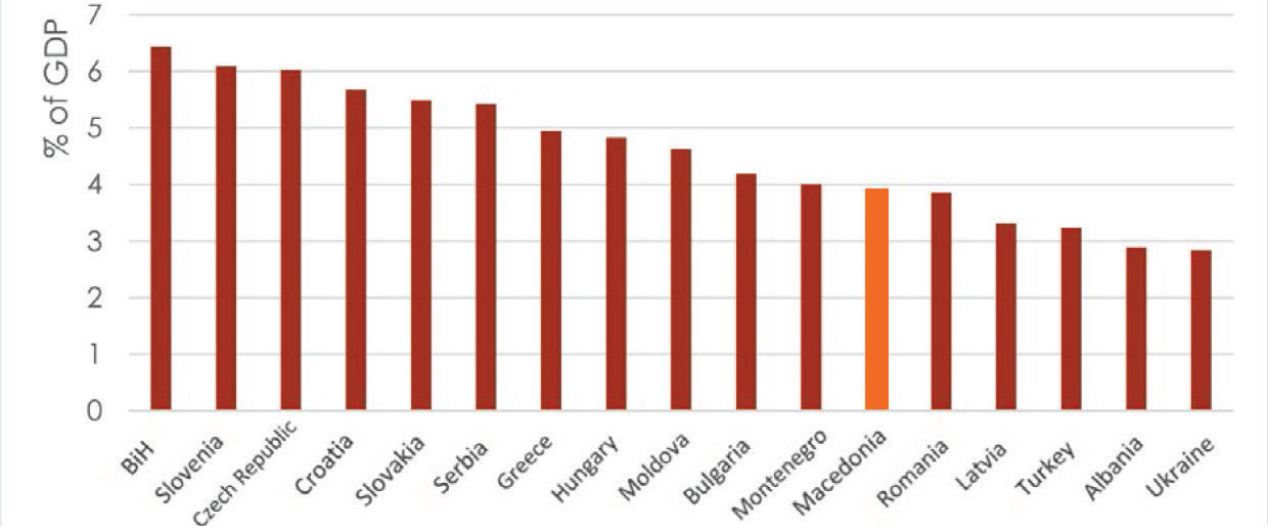
Graph No. 4 Public and private spending on health care as a share of the total funds for health care for 2015



Source: World Bank, world development indicators (2018)

[1]European Observatory on Health systems and Policies-country System Reviews
[2]Global Expenditures Data, WHO (2018)

Graph No. 5 Public spending on health care as a share of GDP, 2015



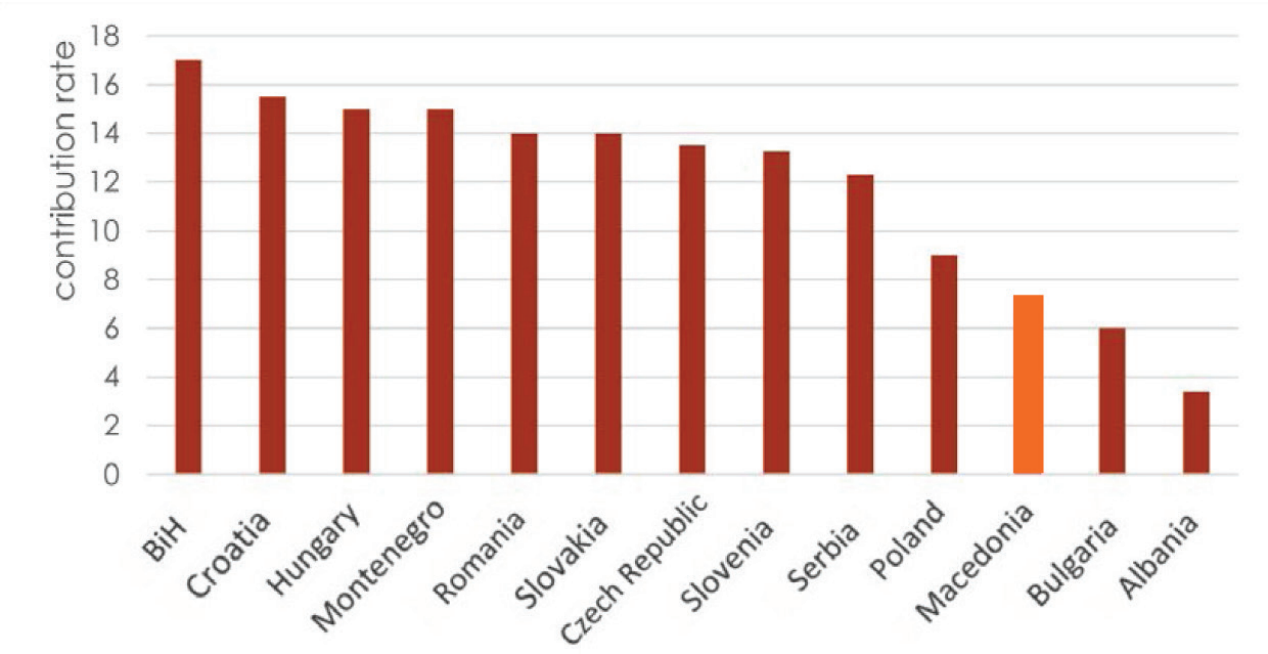
Source: World Bank, world development indicators (2018)

public spending on health care as a % of GDP compared to the other countries.

One of the reasons for this level of funds available in the health system is the contribution allocated for health insurance. In the country, the "basic" contribution rate for health insurance is 7.3% of the gross salary of the employed persons, and the other categories of insured persons pay different, generally, lower rates with lower bases for contribution payment.

According to the data in Graph No. 6, lower rates are seen in Albania with 3.4% and in Bulgaria with 6%. The former Yugoslav republics have higher contribution rates, namely from 12.3% in Serbia up to 17% in some parts of BiH.

Graph No. 6 Comparison of the health insurance contribution rates



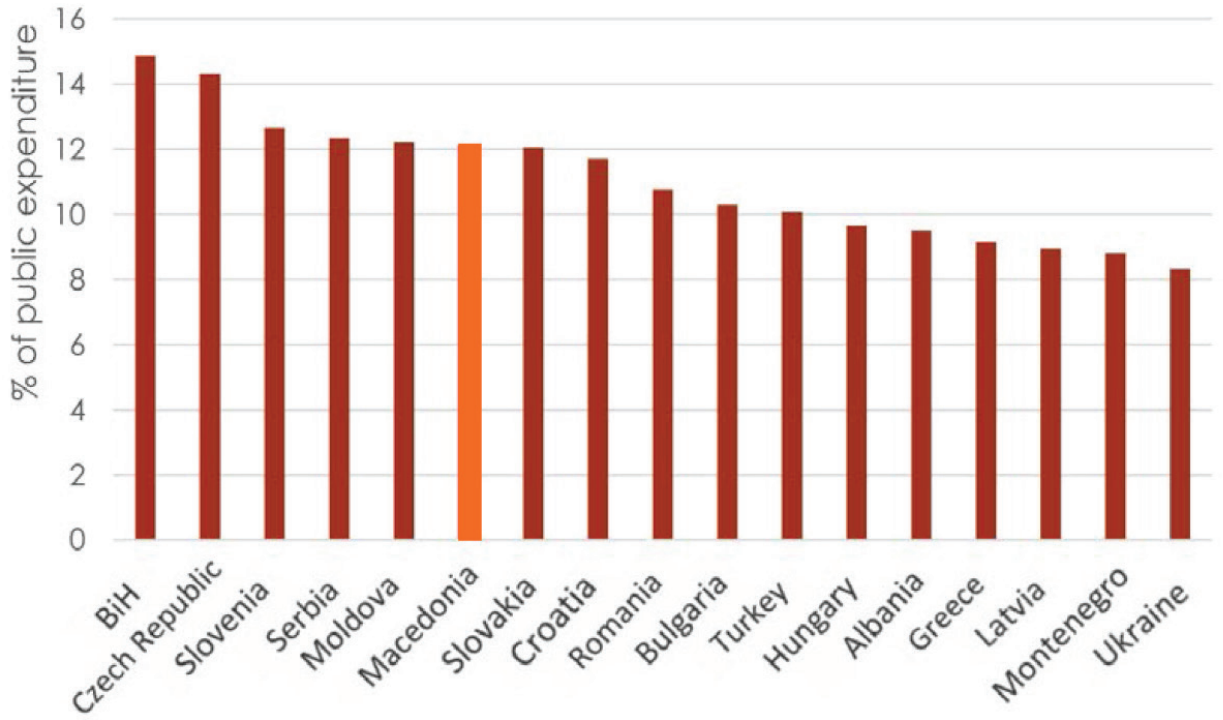
Source: World Health Organization (2017)

2.3.Health care as a priority

How much a country spends on health care partially depends on the fiscal limitations, and partially on the decisions that governments make when defining the sectoral priorities.

As the income rises, the national economies become more formal and more urban, which makes the collection of public taxes easier.[3]In return, wealthier countries also have a higher level of public spending as a share of GDP compared to poorer countries. As expected, the conclusion is that the smaller the fiscal space, the smaller the government expenditure on health. The majority of countries with the lowest government expenditure also have the lowest health expenditure, as a share of GDP (Latvia, Russia).

Graph No. 7 Health care as a % of public spending in 2015



Source: Global Expenditures Database (2018)

The analysis of the final accounts of the Budget of the country suggests that even though the budgets of the Ministry of Health increase in absolute values, from the aspect of sectoral priorities, however, there are no changes. Namely, in continuity, only 3% of the budget expenditures are allocated to health care policies, and a total of 13-15% for the health system (considering that it is predominantly financed by the earmarked contribution) (Graph No. 8 and Graph No. 9).

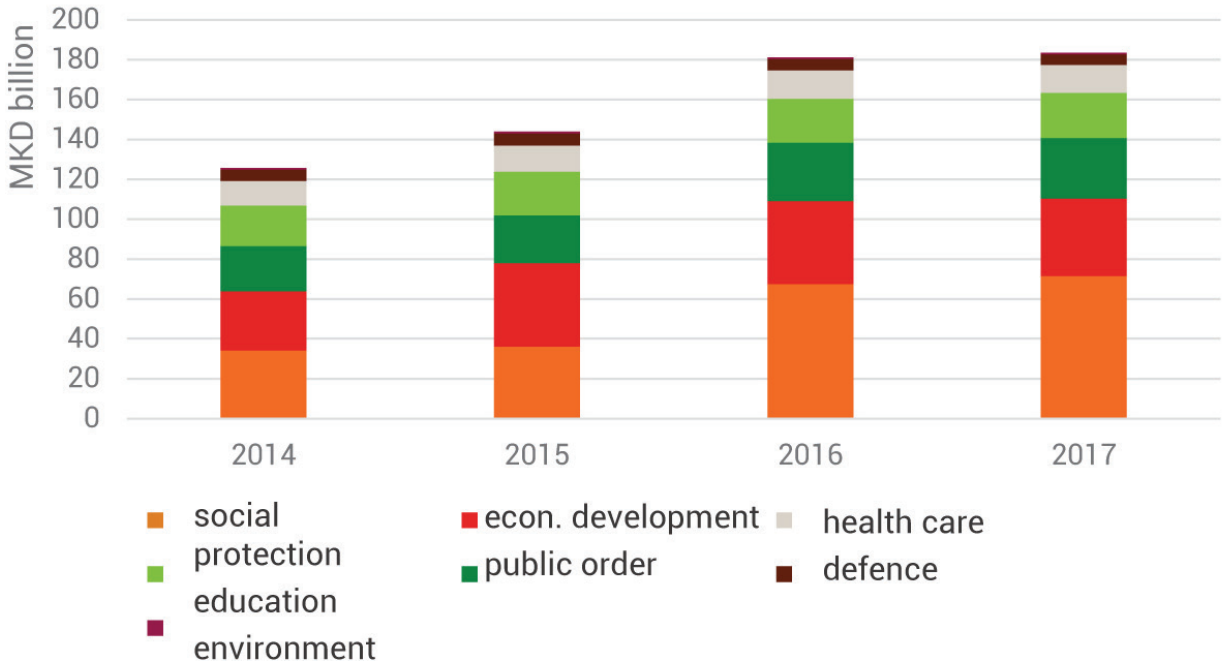
The analysis of the final accounts in the period 2008-2017 suggest that until 2010 the budget of the Ministry of Health was exceptionally small, with an insignificant 1% of the total expenditure, and then in the next three years it rose to 4% of the total expenditure, while the total health expenditure as a % of the total public expenditure reached 17%. In the last years analysed, these ratios have been stable on 3% for the Budget of the Ministry of Health, or 15% for the total health expenditure, in total expenditure of the Budget of the country (Table No. 3).

Most of the public expenditure on health are realised through the compulsory health insurance, i.e. over 90% of these funds are financed through HIFM (or 60% from the total funds for health care), and the remainder from programmes of the Ministry of Health.

Table No. 4 shows that the funds of the Fund continuously increase in absolute

[3]World Bank "Health Financing Revisited- A Practitioner's Guide", Pablo Gottret &George Schiebar (2006)

Graph No. 8 Allocation of budget funds per sectors (MKD billion)



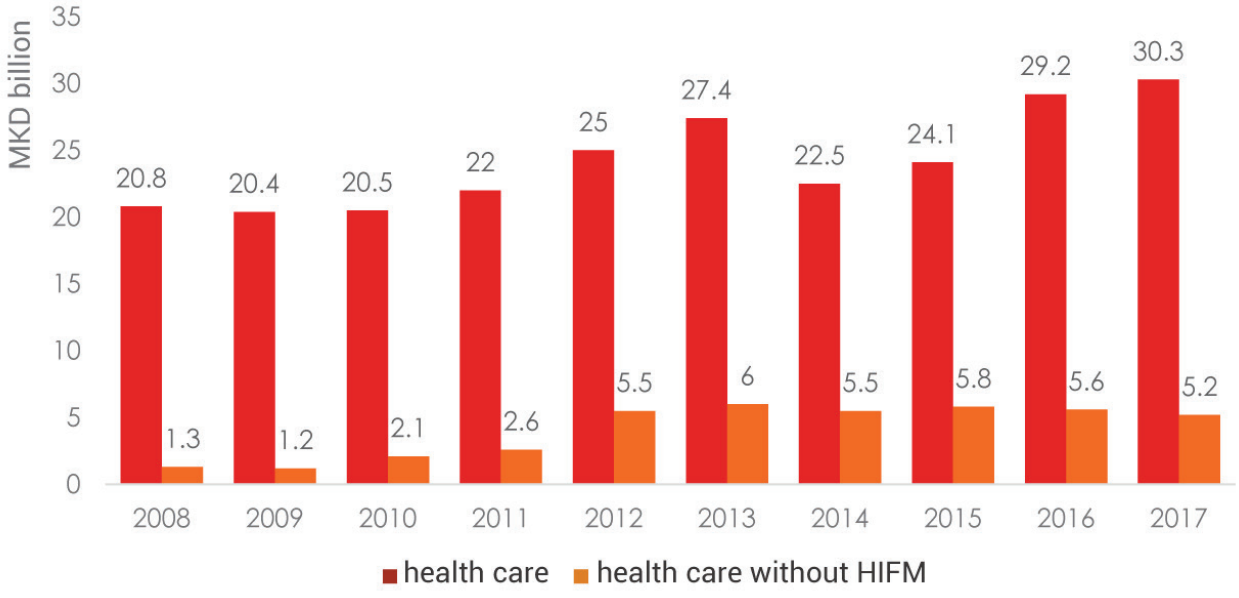
Source: Final Accounts of the Budget, Ministry of Finance, since the introduction of the functional analysis.

Table No. 3 Final Account of the Budget of the country (functional analysis) (in %)

% total public expenditure	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
health care	15	15	14	15	16	17	13	13	15	15
health care without HIFM	1	1	1	2	4	4	3	3	3	3

Source: Final Accounts of the Budget, Ministry of Finance

Graph No. 9 Final account of the Budget of the country (functional analysis) (MKD billion)



Source: Final Accounts of the Budget, Ministry of Finance

values, but they decline in relative values of the total health expenditure from 2003. This suggests that the policies being implemented through the Ministry of Health (preventive programmes, investments in equipment, staff and infrastructure, insulin procurement) also have an ever-increasing share in the expenditure, and the same is true of the new earmarked health financing sources introduced in the past years (games of chance, alcohol excises).

If we analyse the data on the planned and implemented budget of the Fund, we will conclude that even though compared to other countries the Fund's budget is planned on a modest level, at the end of the year, it is never fully implemented.

While HIFM is competent for the purchase of health services, the Ministry of Health funds the capital investments in public healthcare institutions (facilities and medical equipment) and implements the preventive and curative measures and the public health measures through the annual health programmes, financed directly from the central budget[4].

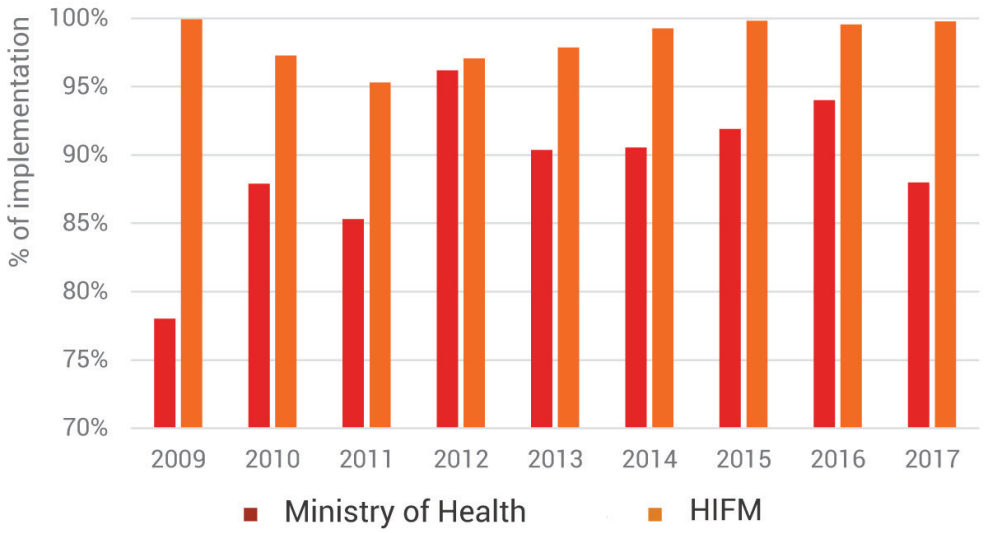
The funds of the Ministry of Health are generally intended for health services for the overall population, unlike HIFM that is financing health services for treatment of

Table No. 4 Budgets of the Fund and of the Ministry of Health (in 000 MKD)

	HIFM	MoH				
		Total	without the affiliated institutions	preventive programmes	curative programmes	investments
2007	16,425,000	1,069,211	894,752	432,332	277,693	55,712
2008	19,630,339	1,322,101	1,145,801	433,801	278,092	308,152
2009	19,165,097	1,257,007	1,063,878	399,656	170,247	305,022
2010	19,803,244	2,147,242	1,973,765	493,409	393,658	863,883
2011	20,967,118	2,648,433	2,554,205	318,054	798,112	1,267,472
2012	21,436,409	5,545,388	5,367,073	346,006	2,573,855	2,310,777
2013	21,888,754	6,018,298	5,840,390	462,482	2,987,166	2,251,511
2014	22,572,544	5,560,409	5,362,923	389,191	3,390,528	1,494,490
2015	24,121,793	5,850,829	5,809,454	594,356	3,557,464	1,222,131
2016	26,032,622	5,630,782	5,556,509	587,726	3,556,879	1,177,683
2017	27,494,136	5,208,073	5,092,765	374,822	3,481,322	1,014,282

Source: Budgets and final accounts of the budgets

Graph No. 10 Share of implementation of the budgets of the Ministry of Health and HIFM, 2009-2017



Source: Budgets and final accounts of the Budget

[4]Milevska Kostova N, Chichevalieva S, Ponce NA, van Ginneken E, Winkelmann J. The former Yugoslav Republic of Macedonia: Health system review. Health Systems in Transition, 2017; 19(3):1–160.

the population that has the right (basis) for health insurance.

At the beginning of each year, the Government adopts these programmes in accordance with its priorities in the health system. The programmes reflect the needs and priorities of the country in the prevention and early detection of certain diseases, but also the financial protection of the population in using health care.

The programmes are divided into two groups:

-Preventive health care – directed towards preventive activities for prevention and early detection of certain diseases; and

-Curative health care for prevention – concerning the financing of or supplementation in the financing of health care for specific diseases. [5]

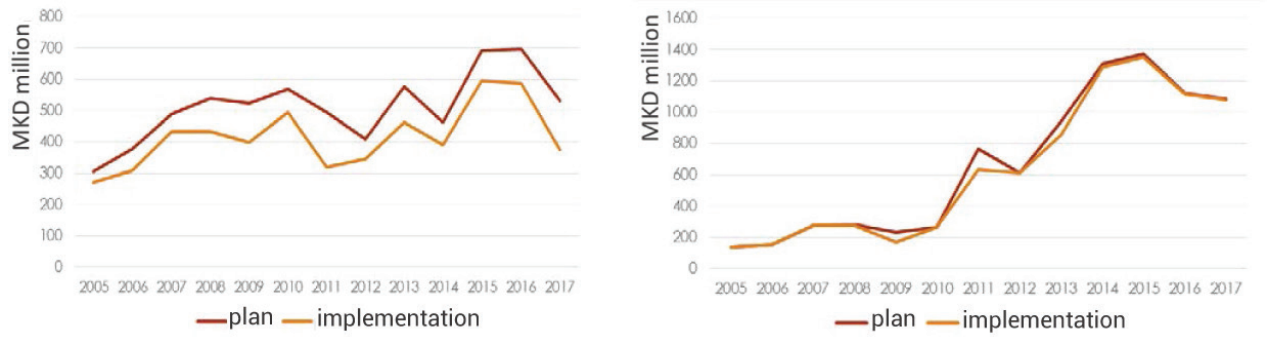
In 2018, the Government adopted a total of 20 programmes for health care: 10 programmes for preventive health care and 10 programmes for curative health care for prevention.

The funds available to the Ministry of Health for financing of its activities note a gradual upward trend since 2004. Thus, from MKD 415 million in 2004, the funds of the Ministry of Health in 2017 were MKD 5,208 million, which is 12.5 times higher. In Graph No. 10 illustrating the movement of the initial budget and realisation of the funds of the Ministry of Health, we note a gradual upward trend from 2004 up to 2009. After this period, there was a sharp increase in the funds from 2012, which was followed by a stabilisation and certain reductions in the funds of the Ministry of Health. The increase in the funds in the period 2010-2012, on the one hand, is due to the adoption of the Compulsory Health Insurance Programme for the citizens in the country lacking any basis for compulsory health insurance, whereby the Ministry of Health through the Budget of the country is paying the contribution for this category of uninsured persons. In addition, in this period, the Ministry started implementing a substantial modernisation of the equipment and facilities in the public healthcare institutions, where a great amount of the funds from the Central Budget was allocated to the health system.

The average implementation of the Budget of the Ministry of Health in the period from 2008 up to 2017 was 84%, it was the highest in 2016 with 94%, and the lowest in 2008 with 65% (Graph No. 10).

As regards the movement and the implementation of programmes, in the preventive programmes there are greater oscillations throughout the years and a significantly lower level of implementation with average 81%. On the other hand, the curative programmes noted an increase, which was due to the introduction of the health insurance programme for all citizens in 2011, followed by a stagnation and a drop after 2015. The implementation of curative programmes is on a significantly higher level in the analysed period with average 96%.

Graph No. 11 Preventive programmes of the MoH (plan versus implementation) (preventive on the left, curative on the right



Source: Ministry of Finance, Budget of and final accounts of the Budget

[5]All programmes of the Ministry of Health are listed in Annex 1 to this study.

3.ALLOCATIONS FOR HEALTH CARE OF CHILDREN

This section of the study will focus on analysing the spending allocated for health care of children in the country, on all grounds. Firstly, we will analyse the funds for health services for children allocated through both preventive and curative programmes by the Ministry of Health, through the Budget of the country. Next, we will look at the majority of funds for health care allocated through the Health Insurance Fund, which appears as the main buyer of health services through various payment mechanisms.

Based on the data available, desegregation of the funds for different types of health services needs to be made based on the analysis and the simulations. Data from the "My Term" the eHealth system in the country, will be used to calculate and make simulations of out-of-pocket payments on health care for children which enter the system on various grounds.

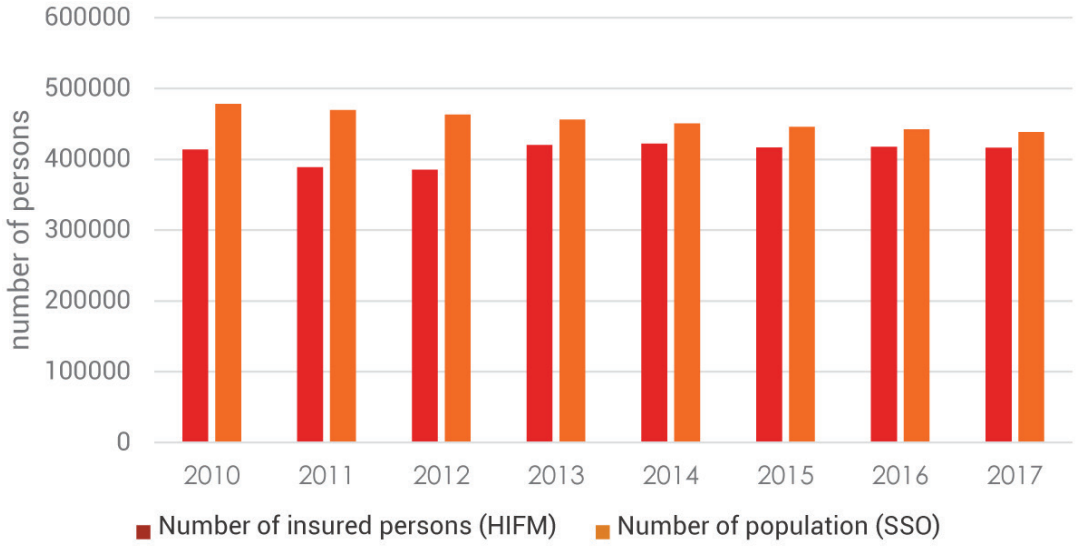
The data for evaluation of the population in the country is based on the last 2002 census. On the other hand, almost the entire population is covered by the health insurance system, and additionally, there is a legal option for anyone who is a resident of the country of getting health insurance. Based on the aforementioned, the number of insured persons, based on the data provided by the HIFM, is expected to reflect the population of children in the country in the most reliable manner.

The number of persons under the age of 18 published in the SSO MAKStat database and the number of insured persons published in the overviews of insured persons, based on age structure breakdown, differ in favour of population statistics with is up to 20,000 to 80,000 persons higher (5% to 17%). In more recent years, the difference is on the smaller end.

Hence, the number of children used in the analysis of funds allocated to health care of children in country is taken from the data provided by the HIFM. According to the data for 2017 published by the HIFM, the number of insured persons under the age of 18 is 416,382 persons.

The only population group part of the minor share of persons not covered by the mandatory health insurance, which is important to be addressed are the round 500 people who don't have any personal documents (MSLP). This small population group is a social problem that is also reflected with exclusion from the mandatory health insurance system.

Graph No. 12 Number of children under 18 years of age in the country (comparison between the HIFM and the SSO databases)



Source: HIFM Overview of insured persons and the SSO MAKstat database

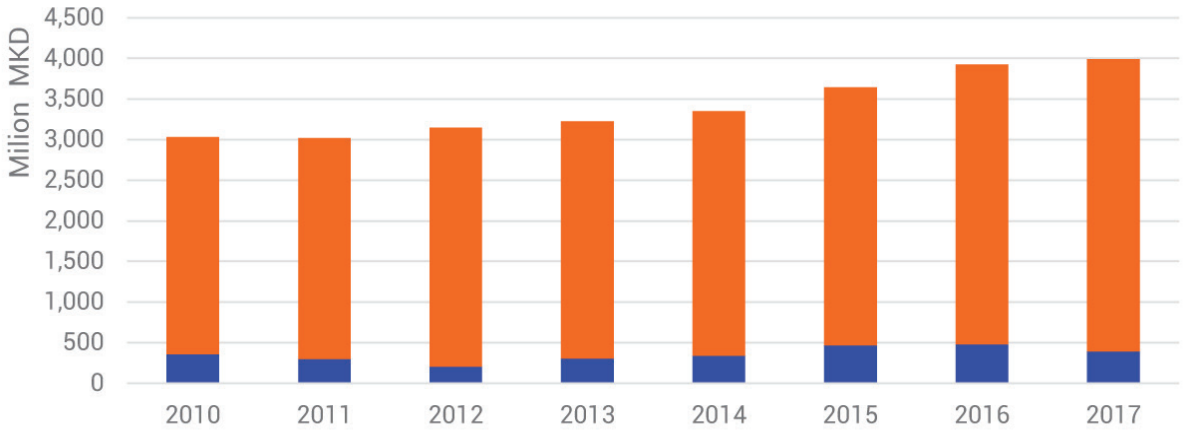
3.1.Public expenditure on health care for children

Public expenditure on health care for children is comprised of funds which are allocated specifically for children by the Ministry of Health through the programmes for health care, as well as of health services for children funded by the Fund. Graph 13 below shows the movement of such funds in the period from 2010 up to 2017, and based on such data, there is a constant increase in public expenditure on health care for children throughout the analysed periods. Based on the analysis elaborated in the text below, in 2017, the amount for health care of children from public expenditure was MKD 4 billion, which compared to the amount of almost MKD 3 billion in 2010, is an increase of MKD 0.9 billion or an increase by 31.7%, or an average growth of 4% for the analysed period. But, in the same period, the nominal economic growth was 41.7%, which means that the increase in the spending on children did not follow the tempo of the economic growth. Therefore, the expenditure for children in 2010 accounted for 0.68% of the Gross Domestic Product (GDP), and in 2017 that share decreased to 0.63%.

However, this particular growth is not reflected in the share of funds for health care of children in the total budget of these institutions (MoH and HIFM). Namely, in 2012, the health care of children accounted for 14.7% of the total budgets of health authorities, while in 2017 the rate has decreased to 13.2% in relation to the increased budget of these institutions.

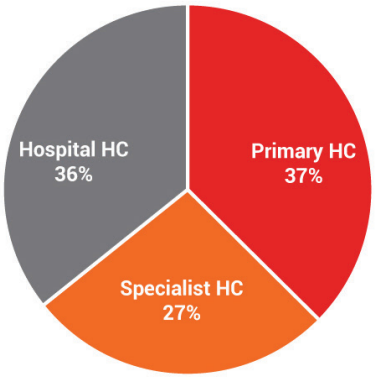
Regarding the structure of public expenditures for health care of children, in 2017, the primary and secondary hospital health care accounted for 37% and 36% respectively, while the specialist level of health care accounted for a lower share of 27% of the total public expenditure (Graph No. 14).

Graph No. 13 Public expenditure on health care for children 2010-2017



Source: Authors' estimations based on data from HIFM and the Final Accounts of the Budget

Graph No. 14 Structure per levels of health care of the public expenditure on health care of children in 2017



Source: Authors' estimations based on data from HIFM and the Final Accounts of the Budget

3.1.1. Programmes of the Ministry of Health dedicated specifically to children

A significant portion of the programmes of the Ministry of Health are dedicated to children and strongly affect the health care they receive. The programmes focusing on children are subject to analysis in this section of the study. Some of the programmes, mostly, the preventive programmes, refer completely to the health care of children, while the rest of them, in some of their activities include health care of children.

• Programmes which are exclusively or mostly dedicated to health care of children:

-Mandatory immunization of the population;

-General medical examinations of pupils and students;

-Active health care for mothers and children.

• Programmes which are partially related to health care of children:

-Providing insulin to insulin-dependent patients;

-Co-insurance for insured persons;

-Public health programme;

-Preventive measures for preventing tuberculosis in the general population.

-Rare diseases

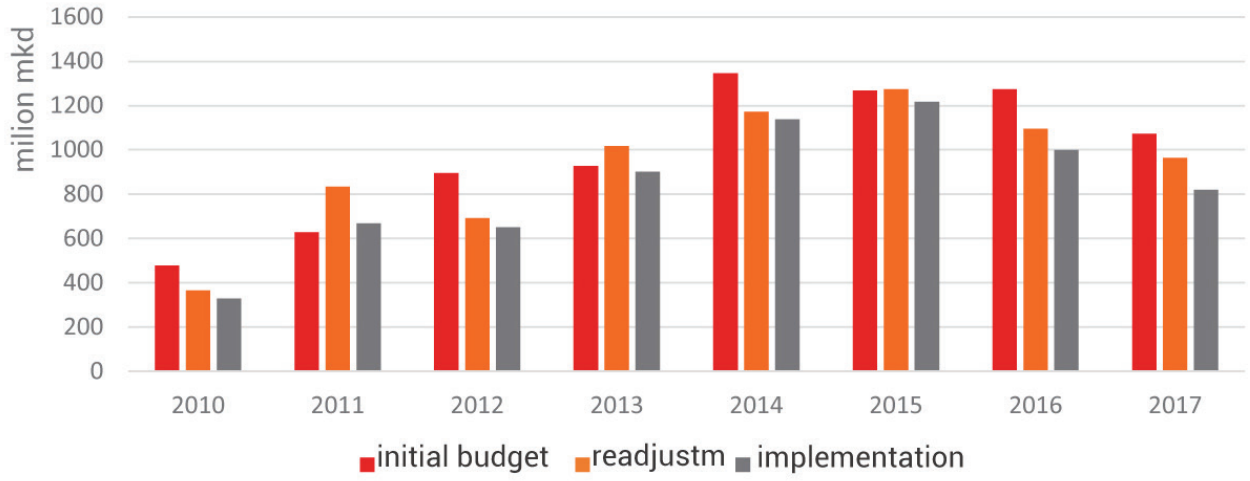
Based on the division above, we have analysed the programmes of the Ministry of Health which are specifically related to healthcare. In great details, we have analysed the programmes and the reports for such programmes with a single aim of identifying the activities and the funds specially dedicated to the health care of children. However, due to the limited data in some areas, they have been simulated based on certain assumptions.

The funds for the programmes for health care which partially or completely include children at the begging of the year, adjust throughout the year and their implementation vary in the analysed years. In that respect, there is an apparent growth trend in the period 2010-2015, and then a certain decrease in the implementation is noted in both 2016 and 2017. In 2017, the budget for these programmes amounted to MKD 1,282 million, which compared to the budget of MKD 572 million in 2010, is an increase of 2.2 times. However, during the year, the programmes undergo corrections based on budget readjustments, and as shown on Graph No. 15, they have all seen a downward correction. The average correction of programmes related to health care of children is -2%. However, in 2011 and 2013, there is an increase in the funds allocated to these programmes.

The average realisation of the programmes listed above is 88% compared to the initial budget.

Funds from programmes related to health care of children, as well as the value of the

Graph No. 15 Programmes for children (plan, readjustment, implementation)



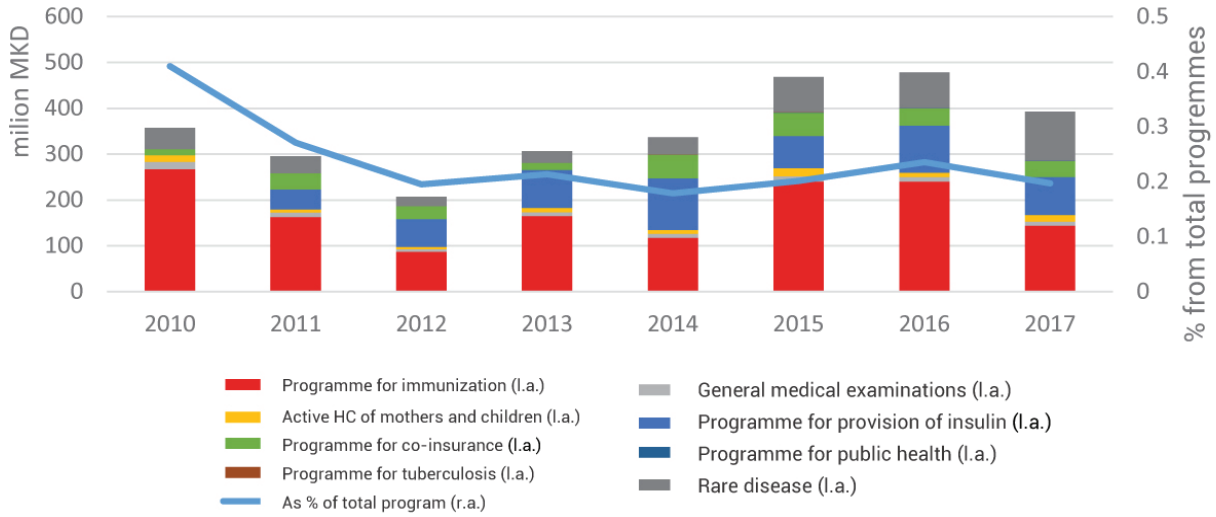
Source: Ministry of Finance, Budget and Final Accounts of the Budget

programmes throughout the analysed years are of various levels. Therefore, starting from a level of MKD 357 million in 2010, there is a decrease to a level of MKD 207 million in 2012. Up until 2016, the funds for children have grown continuously up to a level of MKD 477 million, with a significant decline in 2017 down to MKD 392 million.
From the programmes listed concerning health care of children, the programme for immunization has the highest share, accounting for 50% on average.

a downward trend, due to the lower level of total funds for programmes up to that year. As of 2012, when the programmes for universal health insurance and for insulin procurement catch-up (which value-wise are much bigger programmes), the percentage of funds for children of the programmes has stabilized at the levels of 20% and 28%.

The average funds per child that the country spends from the programmes follow

Graph No. 16 Structure of the programmes for children, 2010-2017

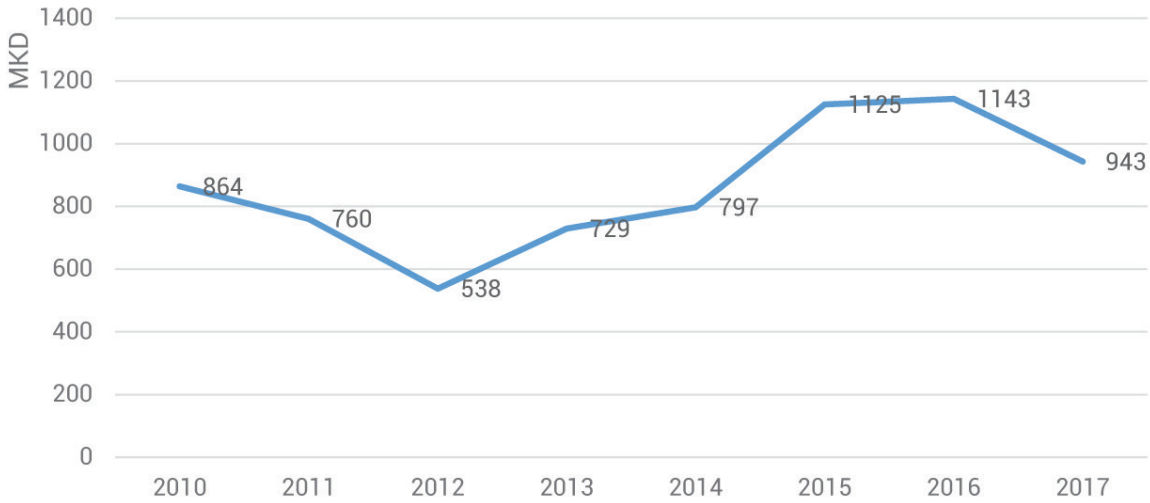


Source: Ministry of Health

Compared to the total funds for programmes for health care of the Ministry of Health, the funds for activities dedicated to children account for 28% on average. This percentage is higher in 2010, and as of 2010 there is

the movement of the total funds for the programmes, and in 2017 they amounted to MKD 943 annually, which is a decrease compared to the previous 2016, when they amounted to MKD 1143 per child.

Graph No. 17 Health spending from the programmes of the Ministry of Health per child



Source: Estimations based on the data of the Ministry of Health

3.1.2. Health services for children funded through the HIFM

In accordance with the hierarchy of the health system financing, most public expenditure comes from health insurance and is used to meet the healthcare needs of insured persons.

3.1.2.1. Health insurance coverage of children

In the social health insurance system that exists in the country, i.e. in terms of the access to health care, children are granted special treatment. So, rather than being based on personal insurance, the health insurance is also based on the insurance of the holder and their members. The law defines "members" as the spouse of the insured persons and their children under the age of 18, or, 26 under defined conditions.

Members enjoy the same healthcare rights as the holder thereof. Additionally, all categories of insured persons have the option of insuring their members, which is of particular importance for the protection of children from vulnerable social categories, for whom the health insurance contribution costs are covered by the state (people with low income, social categories etc.).

In addition to the members, the system also defined special categories aimed at protecting vulnerable categories of children, as follows:

-Children placed in foster families;

-Children placed in social protection institutions;

-Children having a status of children without parents, by 26 years of age at the latest, benefiting from social financial assistance;

-Underage persons which are undergoing an educational measure and have been placed in an educational-correction facility or institution.

3.1.2.2. Health insurance rights

All insured persons, regardless if they are holders of insurance or members thereof, including children, have the same rights provided with the Health Insurance Law.

However, the system provides special treatment of children, notably in terms of the financial protection in using health services. The protection provided by the law refers to the limitations and exemptions of contribution payments in using health care services (co-insurance).

The following categories are exempted from co-insurance payments based on the Health Insurance Law:

-Children with special needs;

-Children placed in social protection facilities and foster families;

-Children under the age of 18 for procurement of lower and upper limb prosthetics, hearing aid, optical aid, wheelchairs and medical aid for urination and defecation.

On the other hand, limitations of the maximum amount a person can pay within a year on the grounds of co-insurance payments have been envisaged. The annual limitations in terms of payments which can be made on the ground of co-insurance for children are as follows:

-20% of the average net average salary for children aged from 1 to 5;

-40% of the average net average salary for children aged from 5 to 18.

These exemptions refer to health services. Medication costs covered by the HIFM and medical treatments abroad are excluded from such exemptions.

3.1.2.3. Mechanism applied by the HIFM to prioritize health care of children

The Fund, within the financing mechanisms for primary level health care, provided by general practitioners, has introduced performance-based payments (preventive goals), as part of the capitations received by general practitioners. Out of the total capitations, 30% are related to the fulfilment of objectives set by the Fund.

The Fund defines the objectives based on its own priorities and on the strategic priorities of the health system, i.e. this portion of the capitation depends on prescriptions and issuing of sick leaves, but also on activities aimed at preventing certain diseases.

As part of the activities aimed at preventing certain diseases, for the two-year cycle 2018-2019, an objective has been defined for undertaking preventive screenings for early detection of spinal deformities in children aged from 6 to 14. In this two-year period, general practitioners are expected to cover 90% of their patients in the age group stated above. 2% of the capitation they receive depends on these activities, and that amount on an annual level is around MKD 44.3 million.

In the period from 2010 to 2017, other preventive objectives have been defined for the child population, specifically:

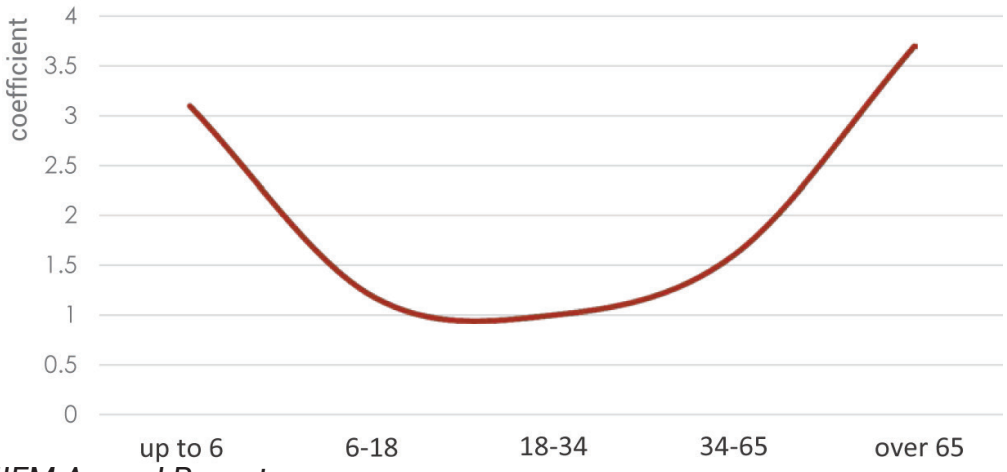
- Preventive screenings for early detection of hearing and visual impairments in children aged 3 to 6 (up until 2017);
- Anaemia, preventive screenings to monitor proper growth and development (up until 2013);
- Obesity (overweightness), preventive screenings to monitor proper growth and development (up until 2013);
- Asthma, preventive screenings to monitor proper growth and development (up until 2013).

In addition to general practitioners, preventive objectives related to children are also set for family dentists. Preventive measures for dentists for 2018 refer to the application of dental sealant to fissures on second permanent molars in all child patients aged 11 to 13. This preventive measure has been conditioned on 5% of the capitation, or around MKD 43.2 million annually.

Due to the fact that child patients, on average, account for higher costs and require more time for health services provision, the HIFM, within the methods of health care financing, has implemented additional mechanisms allowing for higher valorisation of health services provided to children.

One of the mechanisms consists of higher capitation for child patients allocated to general practitioners. Namely, out of the base value of the capitation point, for children up to the age of 6, general practitioners get points which are multiplied by a coefficient of 3.1, while for children aged from 6 to 18, they get points equal to the base value of the point, multiplied by a coefficient of 1.2. In addition to the primary level, mechanisms for higher valuation of health services provided to children have also been implemented on a secondary level. As of 2011, a hospital service allowance has been introduced in institutions specializing in health care of children (the Children's Clinic, the Clinic for Children's Surgery and the Special Children's Hospital Kozle). Based on the hospital services provided, this allowance in 2017 amounted to around MKD 39 million annually.

Graph No. 18 Calculation of capitation points for general practitioners



Source: HIFM Annual Report

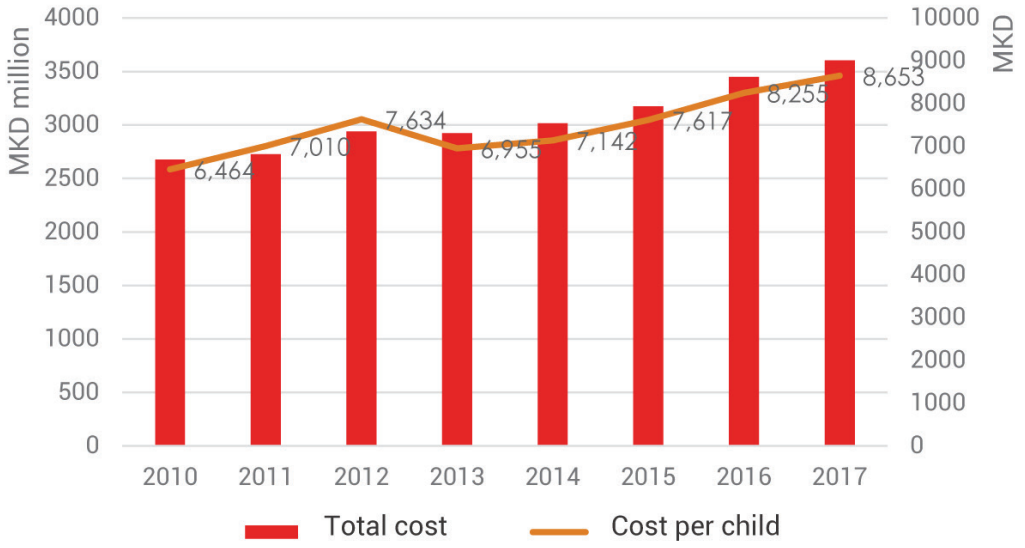
3.1.2.4. Funds for children covered by the HIFM

As stated above, the funds for health services for the population depend on many factors, among others, the age. Accordingly, funds allocated for health services for different age groups differ. During the first years of life, costs tend to be higher, and they go down until the reproductive period in female patients, when new increase is detected, and so on, costs tend to go up again as patients get older.

Based on the age structure of insured persons in the HIFM and the data on age-related distribution of costs for a portion of health services, a simulation has been made regarding HIFM allocations for children under the age of 18 and regarding the average spending per person.

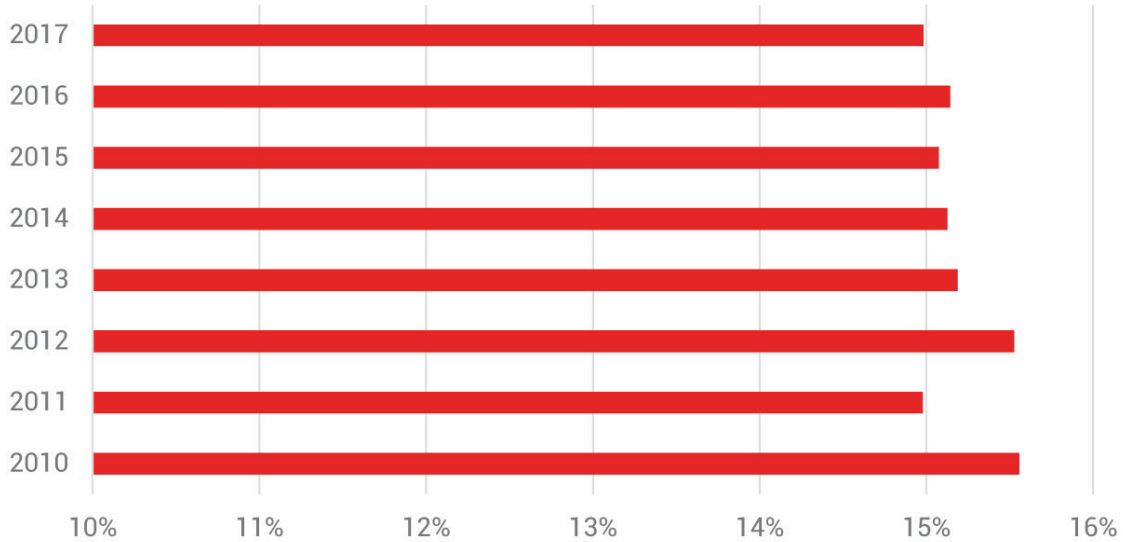
Graph No. 19 below shows that per year there has been a continuous moderate growth trend of the funds in absolute values allocated to health care of children, with a slight drop in 2013. At the same time, the relative values of the healthcare spending for children as compared to other health services of the Fund are in a constant mild downward movement (Graph No. 20).

Graph No. 19 Healthcare-related spending for children from the resources of the Fund



Source: Authors' estimations based on data from HIFM

Graph No. 20 Health services for children as a % of the total health services of the Fund



Source: Authors' estimations based on data from HIFM

3.2. Out-of-pocket payments for health care

As stated above, the health system implements various mechanisms for financial protection of children in using health care, that is, children are exempted from payment of co-insurance or the amount of the co-insurance payment is limited to a lower level as compared to the rest of the population.

Within the services covered at the expense of the health insurance, the only instance when there is no special care for the child population is in the co-insurance payment, but also for additional payment for medicines and medical treatments abroad. Hence, in this set-up of the system and in circumstances of an almost universal coverage of the population by the health insurance system, the out-of-pocket payments in children health care should, on average, be lower as compared to the rest of the population.

One determining factor which impacts the growth of out-of-pocket payments for health care in the entire population are the private medical services provided in the country. Private services are defined as services that have been provided to patients and which are not covered by the HIFM, that is, services that patients have paid for themselves. Such services may include medications which patients pay out of their pockets, as well as dental, specialist or hospital services provided by private health institutions which have not concluded contracts with the Fund.

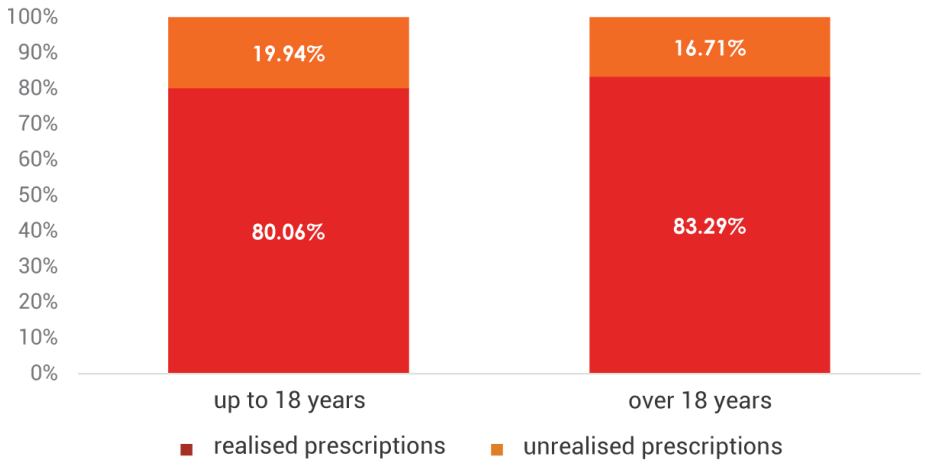
3.2.1. Assessment of out-of-pocket payments for children

The data on out-of-pocket payments for health services in the country are rather limited, and their structure is almost unavailable, which is due, above all, to the non-existence of national health accounts in the country.

Therefore, the assessments made by the WHO which are based on the data provided by the State Statistical Office and the Household Consumption Survey are used to determine the total amount of healthcare out-of-pocket payments in the country. The last available piece of data on healthcare out-of-pocket payments pursuant to the WHO is MKD 11.7 billion annually, or MKD 5,664 per insured person (pursuant to our needs).

Given that anecdotal evidence suggests that children are the majority users of out-of-pocket payments, we have decided to examine this based on data from the "My Term" system. Namely, this system is used to register all drug prescriptions issued by general practitioners to their patients, and it also registers all realised sales of prescription drugs covered by the health insurance system sold by pharmacies. The number of issued and realised prescriptions differs, that is, the number of issued prescriptions is 16.9% higher than the number of realised

Graph No. 21 Issued prescriptions vs. realised prescription medication sales per age groups in 2017



Source: Department for E-Health

prescriptions, i.e. sold prescription drugs. The assumption that can be made here is that some of the patients have decided to pay for the prescribed medication out of their pockets (out-of-pocket payments) due to the unavailability of prescribed medications, due to limited quota, or when purchasing medications which are not on the positive list. We have analysed these differences based on the age structure of patients to whom prescriptions have been made and the results have shown that in prescriptions issued to persons under the age of 18, the difference between issued and realised prescriptions is 19.34% higher than the difference applicable to the entire population.

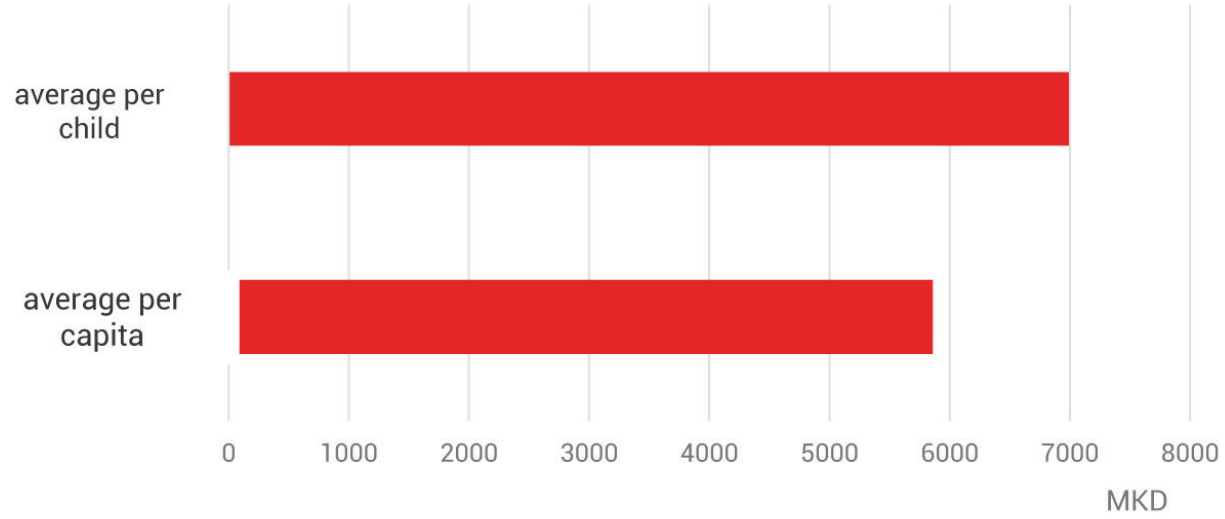
We assume that this difference in medications paid out-of-pocket also refers to the use of private medical services. Therefore, we assume that, in general, out-of-pocket payments for health services for children are roughly 19% higher as compared to the general population in the country.

Consequently, we added the calculated difference for children to the data provided by the WHO about the average annual cost per capita for health care that is MKD 5,860, and the amount obtained is MKD 6,993 annually.

Additionally, to test this result, we have used the Finance Think survey for quality of life, which was conducted on a representative sample of 1,200 households and covers 4,071 individuals, so the calculation was made based on their monthly costs. The survey is representative at national level with stratification per regions and per settlement type, in accordance with the methodology applied by the SSO. The data from this survey has served as a basis to calculate the catastrophic health costs on the level of the entire sample, and on the level of households with children. The calculation was made based on the method of the household capacity to pay with a threshold of 25%.

The results from the analysis of this data show that catastrophic health costs in households with children have higher incidence as compared to the general population. Namely, the catastrophic costs for healthcare in the general population are 1.9%, while in households with children, the level of catastrophic costs is 2.6%, which is higher by 0.7 percentage points.
This result only serves to confirm the thesis that households with children are facing higher risks of excessive costs for health care, which could potentially push such households in financial difficulties.

Graph No. 22 Average out-of-pocket payments for children as compared to out-of-pocket payments for the general population in 2015



Source: Authors' estimations based on data from My Term, SSO and WHO

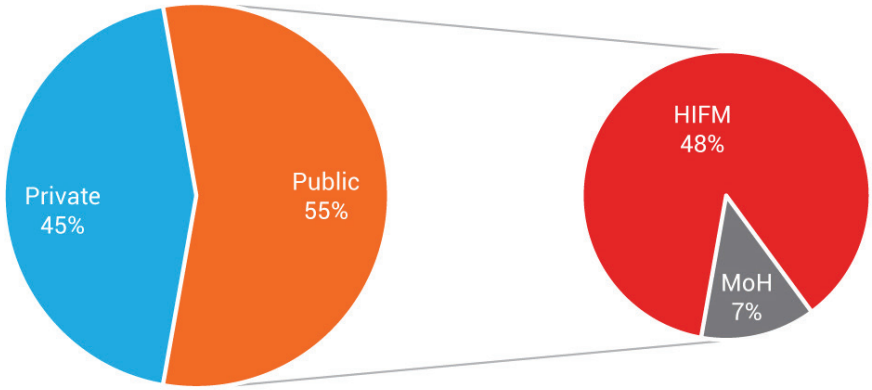
3.3. Level of allocations for health care of children

Previously in this chapter, we analysed and calculated the funds allocated for children from each of the funding sources in the health system. Based on this analysis, the total funds for health care per child in 2015 amounted to MKD 15,734.

In the overall structure of this amount (public - out-of-pocket funds), the share of public expenditure, accounting for 55%, is higher than the one of the out-of-pocket spending, which accounts for 45% of the total funds for health care of children. In terms of public expenditure, the majority of funds are provided by the HIFM, with MKD 7,617, i.e. 87% of the total public expenditure, while the funds allocated to the programmes of the Ministry of Health account for MKD 1125 per child, i.e. 13% in the overall structure of public expenditure. Still, the amount of out-of-pocket payments for health care of 45%, which have been calculated in this study based on the assumptions presented above, raise many concerns, primarily due to the substantial difference as compared to out-of-pocket payments for the general population.

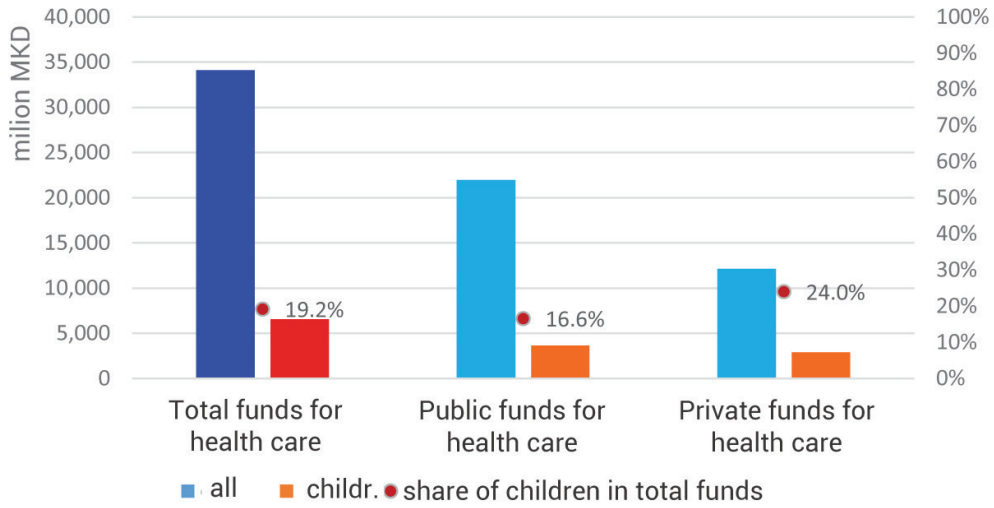
Total funds allocated for health care of children, from all funding sources, amounted to MKD 6.6 billion in 2015, which is 19.2% of the total funds allocated to the health system in the country. Out of those, public expenditure is MKD 3.6 billion, which means that public expenditure on child health care accounts for 16,6% of the total public expenditure on health. On the other hand, out-of-pocket payments for child health care are MKD 2.9 billion, or they account for 24% of the total out-of-pocket payments.

Graph No. 23 Structure of health spending per child



Source: Authors' estimations

Graph No. 24 Health costs for children compared to total health cost in 2015



Source: Authors' estimations based on data from the Final Accounts of the Budget, HIFM, My Term, WHO

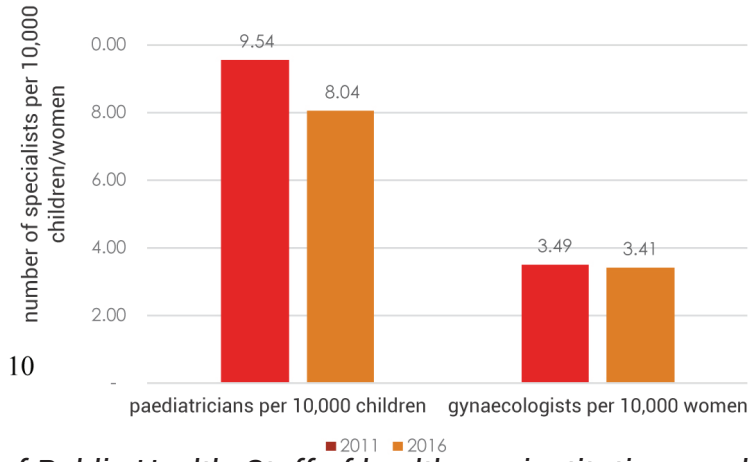
4.OUTCOMES FROM THE HEALTH CARE OF CHILDREN

In addition to the funds made available to the health system, another significant factor impacting both the quality and quantity of health care provided to children is the capacities of the health system. One part of these capacities belongs to the infrastructure and technological capacities of the health system, but very few data is published in this respect. On the other hand, the second most important capacity for health care are the human resources in the system.

The state of play with specialist staff associated with the health care of children in 2011 and in 2016 is presented in Graph No. 25. According to the presentation, the number of gynaecologists per 10,000 women, although low, is rather stable, i.e. in a five-year period, the number has decreased from 3.49 to 3.41 gynaecologist per 10,000 women. On the other hand, when it comes to paediatricians, there have been significant changes; thus, from 9.54 paediatricians per 10,000 children in 2011, their number decreased significantly in 2016 with 8.04 paediatricians per 10,000 children, which is a huge drop, i.e. a staggering decrease by 15.75% in a five-year period. Such decrease in capacities plays an important role in terms of the quality and quantity of health services provided, and also in terms of the level of health care of children.

On the other hand, the immunization of the population plays a key role in the overall health care of children. Historically, the countryhas seen high rates of population immunization, which has been maintained as one of the inherited positive features of the health system before 1991. Graph No. 26 shows the total expenditure on immunization of children and the average rate of immunization for the period 2010-2017. The average rate has been calculated as an average of the immunization of

Graph No. 25 Number of specialists in the country (paediatricians and gynaecologists) per 10,000 persons, in 2011 and 2016



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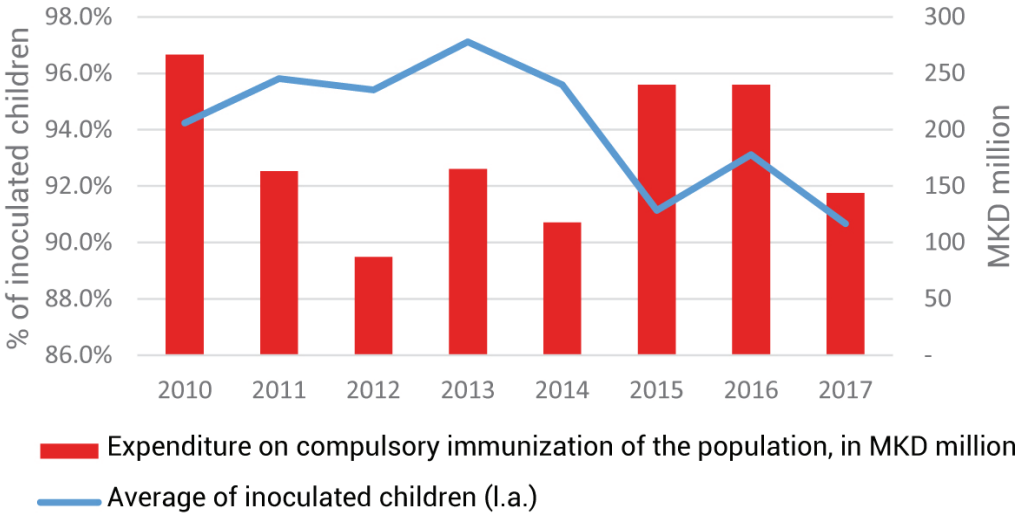
Source: Institute of Public Health, Staff of healthcare institutions and HIFM, Overview of insured persons

infections: DTP, measles, polio, tuberculosis, hepatitis B and Haemophilus Influenzae Type B. Immunization rates in children are relatively high, over 90%. Although this rate of 90% is not low by international standards, there is a noticeable downward trend. At the same time, half of the overall structure of the funds allocated for children are specifically spent for this purpose.

There is no correlation in the comparison with the immunization funds that the Ministry of Health has spent in the analysed period 2010-2017, as seen in Graph No. 26. More precisely, it may be concluded that there is a postponed potential correlation between the funds spent and the immunization rate. On the other hand, in addition to the funds allocated, the drop in the level of immunization in the period above can also be connected to the negative campaign of

Graph No. 26 Immunization rate and funds spent from the immunization programme, between 2010 and 2017



Source: Final Accounts of the Budget,, World Bank

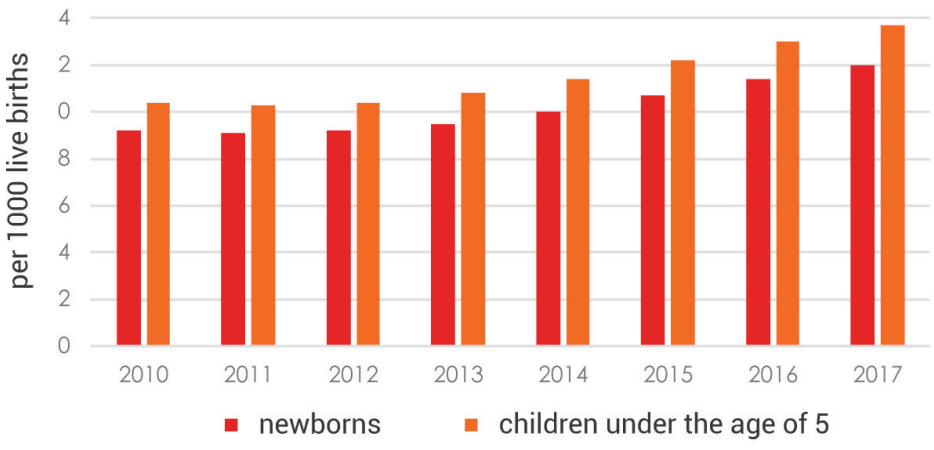
immunization which has been spreading in the past few years.

Infant mortality indicators and mortality of children under the age of 5 are sensitive indicators of both the health status of children and of the entire population. By analysing the situation in the country over a longer period, certain improvement in terms of these two indicators can be observed. However, as of 2010, there is further deterioration, i.e. an increase in the value of these indicators. Infant mortality of 9.2 in 2010 increased to 12 in 2017, and the mortality in children under the age of 5 from 10.4 in 2010 also increased, reaching a level of 13.7 in 2017 (Graph No. 27).

Although in the same period, the relative value of health care funds, calculated above, has decreased, these indicators are also affected by a series of other factors, such as the capacities, organisation, system access and other factors impacting on the health care quality. In addition, many factors outside the health system also have a significant impact, starting from nutrition, access to safe drinking water, all the way to air quality, education level, social protection etc.

However, within the mechanisms available to health authorities, it is necessary to ensure appropriate level of funding for health care of children, which will provide conditions for proper functioning of all links within the health system, and eliminate any remaining barriers to access health care and meet all health-related needs of the youngest population.

Graph No. 27 Infant mortality and mortality of children under the age of 5, between 2010 and 2017



Source: Child Mortality Estimates

5.FINAL CONSIDERATIONS

The study shows and analyses all forms and mechanisms in the health financing system in the country focused on health care of children. Based on calculations with the available data, the share of public health expenditure allocated to children's health care is calculated and presented, as well as the simulated out-of-pocket expenditure on health.

In 2017, the Government has spent EUR 65 million for child health care. In comparison with 2010, the amount spent on child health care increased by 31.7%. However, in the same period, the nominal growth in the economy amounted to 41.7%, which means that the growth in spending on child health care did not follow the pace of the economic growth. Therefore, the expenditure on child health care in 2010 amounted to 0.68% of the GDP, and in 2017, this share dropped to 0.63%.

In terms of the distribution between public and private funds, public expenditures have a larger share which amounts to 55%, whereas the share of private expenditure equals to 45% of the total amount for child health care. Public expenditure is dominated by HIFM funds with MKD 7,617, or 87% of the total public expenditure, while the funds from the programmes of the Ministry of Health with MKD 1125 per child account for around 13% of the total public expenditure.

Nevertheless, the amount of out-of-pocket expenditure on health calculated on the basis of the aforementioned assumptions, of 45%, and the catastrophic level of health costs (2.6) which are higher than the level of the general population, raise concerns in terms of the financial protection that the system should provide when using health services.

Children account for 23% of the entire population, and they use only 19% of the total funds for health care, and have an even smaller share in the public expenditure for health care (17%), which proves that the healthcare policy and the basic healthcare package should be seriously redefined so that children can get priority in the health system. In addition, it is also alarming that, year by year, these figures show a downward trend.

The country, in comparison to other countries from the region, but also beyond, falls within the category of countries with the most modest allocations to health care, both in terms of the parameter of healthcare contribution, as well as the parameters of percentage of health care expenditure in the public expenditure, or percentage of GDP, which points to the need of using the funds in an efficient manner, but also increasing their amount in the medium term.

In order to improve child health, and at the same time relying primarily on the increasing quality of trend analysis in healthcare spending, we suggest the following conclusions and recommendations:

- Improvement of data

•It is necessary for the country to create national health accounts, and at the same time to improve the method of assessment of private funds for health care and their impact on increasing poverty and reducing access to health care, thus to the financial protection that the system provides to the population, or to children, when using health services;

•It is necessary to have continuous monitoring of the indicators of catastrophic costs for health care and calculation of impoverishing health expenditures. In addition, it would be of significance to have these indicators analysed at the level of population groups, taking into consideration the results of this analysis that show higher incidence of these expenditures among households with children.

•Introducing regional monitoring of the implementation of the programmes of the Ministry of Health in order to develop a quality framework of data on regional availability and coverage of services;

• With regard to efficient spending of funds, it is necessary to introduce

internationally comparable analyses that would cover the effectiveness indicators such as healthy life years (HLY), healthy-adjusted life expectancy (HALE) or disability-adjusted life expectancy (DALE).

-Design and funding of Basic Benefit Package

•There should be a legally defined mechanism for health insurance of persons who do not have personal documents/citizenship, and who live in the country for a longer period of time and do not have insurance because of the aforementioned reasons. Children in those families (most of them from the Roma population) should be entirely covered by the health system (both in terms of prevention, as well as curative aspects);

•Focusing on the policies for which health services the population (households with children) has out-of-pocket expenditures and identifying the reasons for the occurrence of these phenomena, as well as defining measures for improving the situation, or reducing the out-of-pocket payments for health services (medicines, private services, orthopaedic aids, etc.);

•Considering that this study presented data about the number of medicines that were not issued at the expense of the Fund, meaning they are bought as an out-of-pocket expenditure, the healthcare authorities should focus on revising the policies in this regard, such as the positive list of medicines and the quota system, which are, in fact, the most restricting factors;

•Revising the healthcare package at the expense of the Fund with the purpose of providing increased coverage of the young population, or to transfer a larger number of health services from the segment of private health services to the segment of public health services (new medicines on the positive list for the needs of children; to remove the quotas, at least for the medicines for children; analysis of the reasons and extent of treatment abroad not covered by the Fund; strengthening the public capacities for provision of health services to children, both in terms of the medical staff, and the infrastructure conditions of these units across the whole country);

•Extending the programmes of the Ministry of Health by clearly defining the coverage of children in each programme, and presenting the success of the programmes in terms of coverage of child population, or improving the method of reporting on the implementation of the programmes;

•Raising the national priority of child health care through realistic development of all programmes of the Ministry of Health in the Budget of the country, followed by complete 100% implementation of these programmes by Public Healthcare Institutions and 100% disbursement by the Ministry of Health;

•Increasing the percentage of public expenditure for children, as opposed to the remaining population, because of the better economic effects achieved through investments in healthy child population;

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Annex 1

Health care programmes

- Preventative health care – focused on preventative activities for prevention and early detection of certain diseases. They include:

•Prevention of cardiovascular diseases;
•General medical examination of pupils and students;
•Organising and promoting blood donations;
•Preventive health care;
•Compulsory immunization of the population;
•Examining the emergence, dispersal, prevention and eradication of Brucellosis in people;
•Preventative measures for prevention of tuberculosis among the population;
•Protection of the population against AIDS;
•Active health care of mothers and children;
•Early detection of malign diseases.

-Curative health care for prevention – it refers to financing of or supplementing the financing of health care against certain diseases

•Health for everybody;
•Health care of persons with mental disorders;
•Health care of persons with addictive disorders;
•Health care of patients on dialysis treatment;
•Co-insurance for insured persons;
•Treatment of rare diseases;
•Complete health insurance and healthcare of citizens of the country;
•Provision of insulin for insulin dependent patients in the country;
•Hospital treatment without payment of co-insurance for retired persons receiving a pension lower than the average pension in the country;
•Training of doctors and medical staff.