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ECONOMIC ANALYSIS OF REIMBURSEMENT OF HYPERTENSION MEDICINES IN MOLDOVA

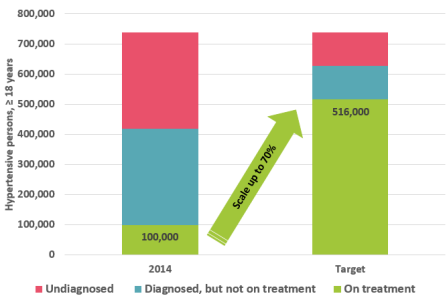
Scaling up hypertension treatment and improving adherence

What does it cost to guarantee patients' access to reimbursed antihypertensive drugs? An assessment of the current reimbursements and a scale-up forecast on budget and clinical outcomes.

According to the World Health Organization (WHO), 76.2% of diagnosed hypertensive patients were not using antihypertensive (AHT) drugs in Moldova in 2014[1]. Even though the situation has improved, the underutilisation of hypertension (HT) treatment remains a public health concern. This policy brief assesses reimbursement costs of AHT drugs in 2017 and predicts the additional investment needed, in the drug reimbursements, to scale-up the treatment uptake to 70% of all hypertensive patients in Moldova.

The policy challenge, that the healthcare system of Moldova faces with the scale-up, has two dimensions. Firstly, how to reach undiagnosed hypertensive persons and initiate them on the treatment? Secondly, how to improve the treatment adherence of existing and newly diagnosed patients? A success in any of these aspects will significantly increase the reimbursement expenditure of the National Health Insurance Company (NHIC), and should, therefore, be budgeted. Currently, NHIC reimburses 50-70% of the cost of AHT drugs and the rest is paid by the patients.

Figure 1: Hypertensive persons; undiagnosed, diagnosed but not on treatment and on treatment. 2014 is based on the WHO survey[1]. The selected target is to scale-up the uptake of hypertension treatment to 70% of all hypertensive patients.



Current situation

There are 2,219,000 ≥18-year-old persons in Moldova[2]. According to WHO, the prevalence of hypertension (SBP≥140 and/or DBP≥90) is 33.2% in this age group in Moldova[3]. Consequently, there are an estimated 737,000 hypertensive persons. According to the hypertension treatment protocol, all these persons should be on AHT medication and monitored regularly.

However, calculations based on the WHO survey1 show that 43.3% of all hypertensive persons were not diagnosed, 43.2% had been diagnosed but were not on treatment and only 13.5% were on AHT medication in 2014. This equals to estimated 100,000 patients on treatment. This policy brief forecasts the cost and health outcomes of scaling up the treatment uptake to 70% of hypertensive persons (Figure 1).

METHODS

The records of the National Health Insurance Company (NHIC) on the total reimbursement payments for cardiovascular disease drugs and the number of patients 2016-2017 were used[4]. 80% of these cardiovascular patients were assumed to be hypertensive. However, it seems that the reimbursement reporting system does not capture which AHT drugs are prescribed and what the volumes are. Therefore, records of pharmaceutical distributor companies were used to assess the portions of AHT drug combinations prescribed in Moldova[5]. These were then combined with the reimbursement list prices of NHIC[6] to calculate the average reimbursement- and out-of-pocket payments per patient-year. Next, the maximum feasible full adherent coverage was estimated by dividing the average reimbursement per patient paid by NHIC in 2017, with the calculated average reimbursement per patient-year (Table 1).

RECOMMENDATIONS

1. Increase and sustain funding for the reimbursement of antihypertensive drugs.
2. Improve treatment adherence, before scaling up.
3. Include treatment coverage information in the reporting system of NHIC.
4. Add new antihypertensive drugs in the reimbursement package.

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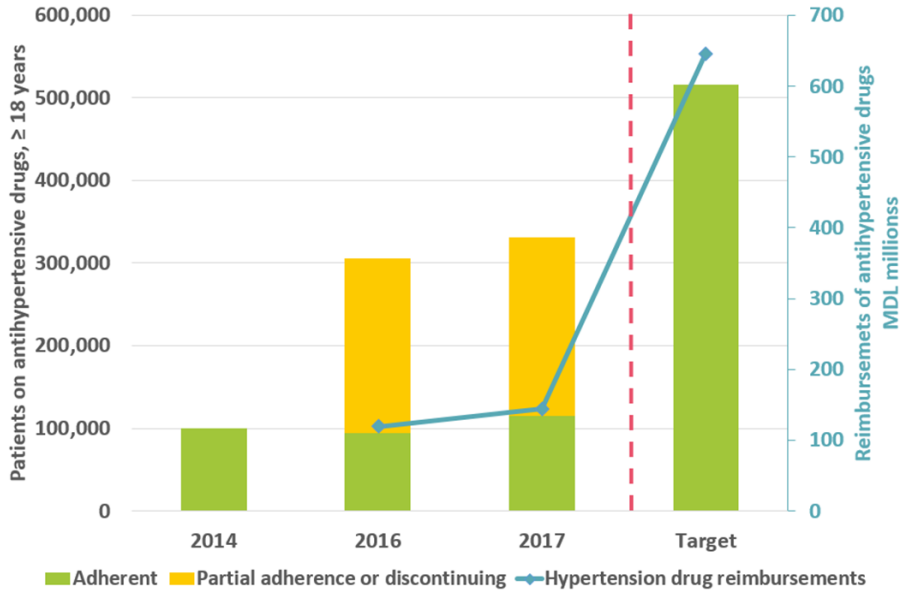
Figure 2: Patients on antihypertensive medication and reimbursement payments of NHIC. Persons on treatment at the time of the WHO survey in 2014[1]. 2016-2017 are from NHIC records[4]. The green bars of 2016-2017 represent the maximum feasible number of fully adherent patients with the available budget. The target used is to increase the treatment uptake to 70% of hypertensive persons.



Finally, the cost and health outcomes of scaling up the uptake of HT treatment to 70% of hypertensive patients were forecasted. The analysis was carried out from the perspective of healthcare payer / NHIC and the results are presented as Moldovan Leu (MDL) in 2017.

RESULTS

According to the records of NHIC, the number of patients receiving partly reimbursed hypertension drugs increased from 306,000 in 2016 to 313,000 in 2017[4]. The corresponding reimbursement payments raised from 118 million MDL in 2016 to 144 million MDL in 2017 (Figure 2)[4].

On average the reimbursement payments were 434 MDL per patient in 2017. However, when combining the pharmacy distributors' records[5] and the reimbursement prices of NHIC[6], the average reimbursement cost per a fully adherent patient-year becomes 1,251 MDL. This is considerably higher than the actual reimbursements made by NHIC in 2017. This means that the majority of the 313,000 patients who received reimbursed AHT drugs in 2017 were only partially adherent and/or discontinued the treatment.

To illustrate the adherence gap, the 118 million MDL AHT drug reimbursements in 2017, would afford only a maximum of 115,000 (34.7%) fully adherent patients in 2017 (the green bars for 2016 and 2017 in Figure 2).On average the reimbursement payments accounted for 65.5%, and patients' out-of-pocket co-payments for 34.5%, of the total price of the medicines.

Scale-up forecast

How much does it cost to scale-up the uptake of hypertension treatment to 70% of hypertensive patients? The increase would result in 516,000 patients using AHT drugs. The main challenges lay in the improvement of treatment adherence of the current patients (the yellow bars in Figure 2), and screening and initiating treatment of 184,000 new previously undiagnosed patients. The scale-up would increase the annual reimbursement costs to 645 million MDL, requiring an additional annual investment of 501 million MDL from the current level. To guarantee patients' access to the long-term treatment the budget should be sustained on this level. It was assumed that the reimbursement prices and out-of-pocket contributions remain unchanged.

Clinical impact

It is difficult to predict possible health outcomes resulting from such scale up in Moldova. Especially, when the current treatment adherence is not known and also because estimating clinical outcomes of

Table 1: Antihypertensive drug combinations as % of prescriptions, reimbursement- and out-of-pocket payments as MDL per patient-year. ACE inhibitors (ACE), beta-blockers (BETA), angiotensin II receptor blockers (ARB), calcium channel blockers (CCB) and diuretics. *All patients were assumed to be prescribed with Acidum Acetylsalicylicum

Hypertension drug combination	% of pre-scriptions	Reimbur-sement	Out-of-pocket
ACE + Diuretics	27%	924	396
ARB + Diuretics	21%	1,523	653
ACE + BETA	18%	854	366
ACE + BETA + Diuretics	9%	1,307	560
ARB + BETA	9%	1,453	623
Other combinations	18%	839	563
Acidum Acetylsalicylicum	*100%	152	152
Weighted average (% of the total price)		**1251** (65.5%)	**659** (34.5%)

Reimbursement of antihypertensive drugs in 2017 and 70% scale-up

434 MDL
Average reimbursements per patient in 2017, 35% of full adherence

1,251 MDL
Reimbursement per full adherent patient per year

659 MDL
Co-payments per full adherent patient per year

516,000 patients
Treatment scale-up: 70% of all hypertensive patients

645 million MDL
Treatment scale-up: Annual investment needed for reimbursements

Table 2: Estimated averted annual health outcomes resulting from the scale-up of hypertension treatment uptake to 70% of all hypertensive patients in Moldova. Note: the numbers are rounded to hundreds due to the significant uncertainty of these estimations.

Health outcomes	Averted everts per year
Cardiovascular events; fatal and non-fatal strokes, myocardial infarctions and congestive heart failures[8]	700
Cerebrovascular events; fatal and non-fatal strokes[8]	300
Cardiovascular deaths[9]	400

partial adherence is ambiguous. Nevertheless, table 2 shows indicators of possible averted health outcomes resulting from the scale-up.

DISCUSSION

Even though the situation has improved, the underutilisation of hypertension services remains a public health concern in Moldova. Many other interventions will certainly contribute to the improvement and scale-up of HT services. However, the long-term HT treatment is interlinked with the most of them. Therefore, even relatively small gains in adherence or scale may cause a significant and cumulative increase of the long-term reimbursement costs. Therefore, the efforts to improve HT services should be accompanied by sufficient budget for the reimbursement of AHT drugs.

Particularly, the apparent poor treatment adherence is concerning. As a large group of non-adherent patients do not get the full benefits of, otherwise effective, long-long HT treatment. Moreover, from an economic point of view, the poor adherence waste limited resources in Moldova, as the screening and diagnosis efforts do not result in the health benefits that they should.

The strength of this analysis is that it combines the wholesale records of antihypertensive drugs and the reimbursement payments made by NHIC, and is therefore likely to provide a realistic estimation of the actual usage of the AHT drugs in Moldova.

As with any modelling study, the results are influenced by the model structure and inputs. The actual treatment adherence in Moldova is not known. The cost results are sensitive to changes in prescription practices and reimbursement prices. The 70% treatment coverage target was chosen, in the absence of explicit policy goals for the treatment uptake and adherence. The projected clinical outcomes are based on international literature and might not represent the healthcare delivery in Moldova. Therefore, the results should be interpreted as estimations.

CONCLUSION

Significant additional long-term investment is required to ensure patients access to reimbursed antihypertensive drugs. From an economic point of view, hypertension treatment adherence should be improved first, before proceeding with scaling up.

Policy recommendations

1. Increase and sustain funding for the reimbursement of antihypertensive drugs. HT requires long-term treatment, that increase the costs. Therefore, efforts to improve and scale-up hypertension services should be accompanied by a sufficient and sustained budget for the reimbursement.

2. Focus first on the improvement of treatment adherence, before proceeding with scaling up the services. From an economic point of view, it is better to use the limited resources in the improvement of adherence of current patients, than scaling up suboptimal services that result in poor adherence.

3. Include treatment coverage information in the reporting system of NHIC. Consider adding prescription details, like drug names and volumes, in the reporting of AHT drug reimbursements. This information is already available in the prescription forms but seems not been included in the reporting of NHIC. This would enable monitoring of the actual coverage of hypertension treatment and would be useful for cost control purposes as well.

4. Consider adding new more effective AHT drugs in the reimbursement package and continue updating the reimbursement prices.

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This document is accompanied with a second policy brief assessing the cost of hypertension services in primary healthcare in Moldova[10].

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