

ECONOMIC ANALYSIS OF HYPERTENSION SERVICES IN PRIMARY CARE IN MOLDOVA

How much good quality hypertension services actually cost?

Cost analysis of hypertension services, when monitoring and testing of hypertensive patients are done according to the national protocol, and comparison with the capitation payments in primary healthcare.

According to the World Health Organization (WHO), 33.2% of the adult population of Moldova are hypertensive¹. Even though hypertension services have a high priority, the actual costs of providing good quality hypertension services in primary healthcare are not known. This policy brief provides new information of the costs of hypertension services, when monitoring and testing of hypertensive patients are done according to the national protocol², and compares the results with the capitation funding of primary health centres in 2017.

Four Primary Health Centres

There is a large group of hypertensive adults (737,000) in Moldova¹. Effective hypertension care requires long-term and frequent monitoring and testing of patients. This consumes the already limited resources of primary healthcare. Four primary health centres; two raion centres; CS Criuleni and CS Briceni, two smaller rural centres; CS Mărăndeni, Fălești and CS Ciolacu Nou, Fălești, were selected for the study. All the centres are a part of the current performance-based

financing scheme of the MoHLSP. The clinics seem to perform relatively well and have diagnosed the majority of hypertensive persons living in their catchment area (Figure 1)^{1,3}. 49% of all the diagnosed patients are on antihypertensive treatment (AHT). However, 27% of the diagnosed hypertensive patients who require AHT (the no treatment group excluded) were non-adherent. The frequency of monitoring consultations and the use of tests, as described in the protocol², were used as a proxy for good quality hypertension services.

Time-use survey

A time-use survey was carried out to assess how the medical personnel used their work time on servicing hypertensive patients in the four centres in May - June 2018. In total 5,700 hypertension consultations provided by 100 general practitioners (GPs) and nurses were included in the analysis. In addition, the survey captured patients' reasons for the visits, and services and task provided by the personnel. Interesting and detailed results of the survey can be found in a supplementary report⁴.

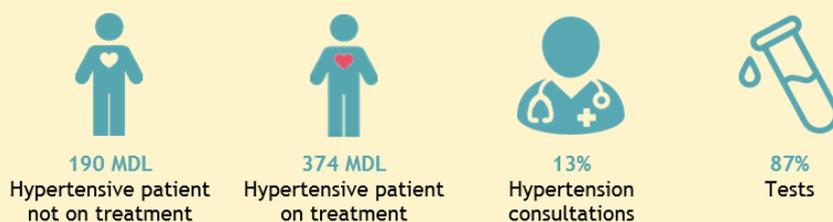
RECOMMENDATIONS

1. Increase the funding of hypertension services in primary healthcare.
2. The increase should be conditional of the volume and quality of the services.
3. Limit the cost of laboratory testing.
4. Measure the frequency of monitoring consultations.
5. Encourage prevention activities.

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Annual costs of hypertension services



Antihypertensive drugs excluded. % of the total cost of consultations and tests.


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Proiect Viață Sănătoasă

Reducerea poverii bolilor netransmisibile

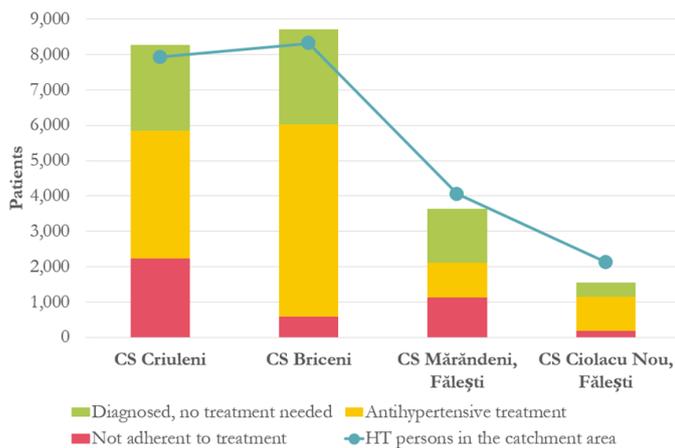


Figure 1: Hypertensive patients in the four primary health centres and estimated numbers of hypertensive persons living in the catchment area in 2017. Diagnosed, no treatment needed (high-normal BP and grade 1-2 HT, with low risk), antihypertensive treatment (grade 1-3 HT, with moderate - very high risk) and not adherent to treatment (grade 1-3 HT, with moderate - very high risk).

Test	Diagnosed, no treatment needed	Antihypertensive treatment	Price, MDL
Fasting Plasma Glucose	1	1	11.42
Serum Cholesterol	1	1	20.67
Fasting Serum Triglyceride	1	1	20.00
Serum Uric Acid	1	1	18.35
Serum Creatinine	1	1	19.00
Haemoglobin and Hematocrit	1	1	36.13
Urinalyses; Microscopic, Dipstick test and Microalbuminuria	1	1	37.00
Electrocardiography (ECG)	1	1	10.85
LDL Cholesterol		1	42.50
HDL Cholesterol		1	40.25
Serum Potassium		1	49.00
Estimated GFR or Creatinine Clearance		1	23.00

Table 1: Annual routine monitoring tests² and average prices in the four primary health centres.

METHODS

The analysis was carried out from the perspective of healthcare payer and the results are presented as Moldovan Leu (MDL) in 2017. This analysis focuses on the variable costs of hypertension services in primary healthcare. Training costs and overhead costs were excluded. Further, reimbursement and out-of-pocket payments for antihypertensive (AHT) drugs are also excluded, as these are not a part of the centres' capitation payments. The AHT drug reimbursement costs are addressed in an accompanying policy brief⁵.

RESULTS

How much does one hypertension consultation cost? The average length of a hypertension consultation was **20.0 minutes** (GPs 20.5 minutes and nurses 19.1 minutes) and the average cost **12.45 MDL** (GPs 14.37 MDL and nurses 8.98 MDL). These costs include only the consultation time +10% for administrative tasks, and are based on gross salaries. The cost of hypertension consultations is low because the salaries of medical personnel are relatively low in Moldova.

Annual cost of hypertension consultations per patient? The annual consultation cost per patient depends on the severity and risk factors of their hypertension.

Therefore, different monitoring consultation schedules² and numbers of unscheduled visits⁴ were used for two patient groups. Diagnosed patients, who do not require treatment, had on average 1.37 consultations, which costed in total 17.02 MDL per year. Patients on antihypertensive treatment had on average 3.65 consultations, which costed 49.39 MDL per year (Figure 2). Non-adherent patients were assumed not to use primary healthcare services. The GPs spent 21.7% and nurses 12.5% of their work time on consultations of hypertensive patients⁴.

Laboratory testing and electrocardiography (ECG) per patient per year. The testing costs are relatively high, when testing of hypertensive patients is carried out according to the protocol (Table 1)². The testing costs of diagnosed patients not on treatment were 173.41 MDL per year and for the patients on antihypertensive treatment 328.16 MDL per year (Figure 2). Consequently, 88.6% of the total cost of hypertension services in PHCs are spend on testing.

Total annual costs per hypertensive patient. The total annual cost of a diagnosed patient who is not on treatment was 190.43 MDL and a patient on antihypertensive treatment 373.55 MDL (Figure 2). When these are combined with the patient volumes

(Figure 1), 75% of the total cost of hypertension services were spent on the patients who are on treatment. Moreover, the antihypertensive drugs for these patients cost on average an additional 1,251 MDL per patient per year⁵.

How much was spend on hypertension services in the four PHCs? The total annual capitation payments received for ≥18-year-old adults of the four primary health centres in 2017 are shown in yellow in Figure 3. Assuming that the monitoring consultations and tests are done according to the protocol², the hypertension services (in green) account for 25.9% of the total capitation payments.

DISCUSSION

Even though the performance-based financing (PBF) records of the four primary health centres indicate a considerable improvement from the low hypertension treatment uptake reported by WHO in 2014⁶, the underutilisation and quality of hypertension services remain a public health concern in Moldova. Funding for these services needs to be increased, if the uptake of quality services is to be scaled up.

Are the hypertension services underfunded? This study cannot directly answer this question. However, spending 25.9%, a quarter, of the annual capitation



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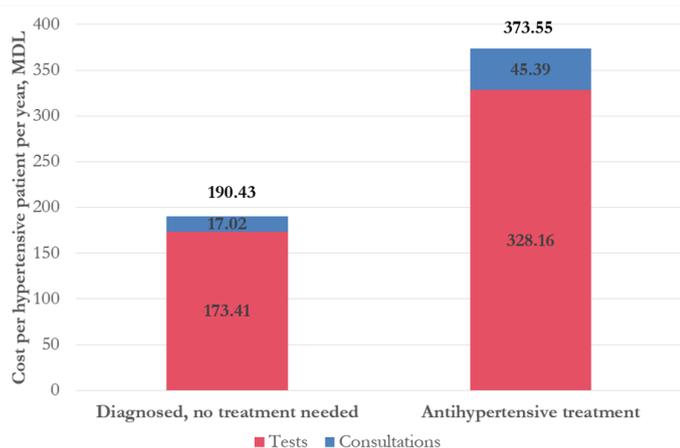


Figure 2. Annual cost per hypertensive patient in primary healthcare.

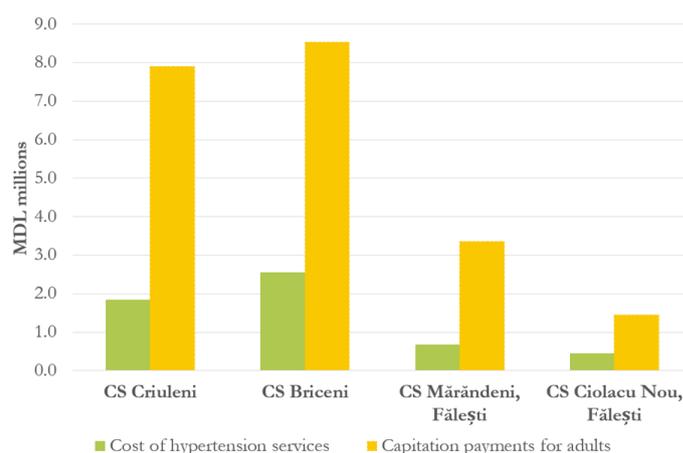


Figure 3: The cost of hypertension services and capitation payments for adults in the four centres in 2017.

income on monitoring and testing one disease seems disproportionate, and will inevitably come at the cost of other healthcare services.

Moreover, the combination of the ambitious testing scheme of the protocol and underfunded primary healthcare services raises questions about the feasibility and sustainability of such a guideline. Even though clinically reasonable, spending 88.6% of the total cost of hypertension services on testing seems excessive. Many of the resource-constrained primary health centres simply cannot afford to spend so much on testing. The cost of hypertension consultations is low in comparison to the testing costs. This is because the salaries of medical personnel are relatively low in Moldova.

The strength of this analysis is that it combines the time-use survey and PBF records, and therefore provides a realistic picture of the hypertension services in the four centres. On the other hand, the results are based on assumption that all consultations and testing are carried out according to the protocol. Therefore, the results are likely not to represent the current practice and situation in other centres.

This document is accompanied by another policy brief assessing the reimbursement of antihypertensive drugs in Moldova⁵.

CONCLUSION

If the hypertension services in primary healthcare are to be provided according to the national protocol, the funding of hypertension services needs to be increased substantially.

Policy recommendations

- 1. Increase the funding of hypertension services in primary healthcare.**
- When feasible, the increase should be **conditional of the volume and quality** of the services provided by each centre.
- 3. Limit the cost of laboratory testing** by setting ceiling prices for the tests. Consider also testing of diagnosed patients, who are not on treatment, only when there are risk factors requiring further investigation.
- 4. Measure the frequency of monitoring consultations**, which is a good quality indicator for both follow-ups and treatment adherence.
- 5. Encourage prevention activities.** Patients on antihypertensive treatment are expensive. Services that prevent or postpone the treatment are likely to produce good value for money.

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