

AHEAD



**ACTION FOR HEALTH AND EQUITY
ADDRESSING MEDICAL DESERTS**

**REPUBLIC OF MOLDOVA MEDICAL
DESERTS COUNTRY REPORT
JUNE 2022**

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MANAGEMENT

CHISINAU – REPUBLIC OF MOLDOVA

This report is produced within the project Action for Health and Equity - Addressing Medical Deserts (AHEAD), funded by HaDEA. The **AHEAD project** is led by a consortium of six organizations, who together are working to achieve better access to health services, especially in underserved areas, and more equitable access to sufficient, skilled and motivated health workers in Italy, Moldova, the Netherlands, Romania and Serbia. More details on this action can be retrieved from project's website <http://ahead.health>. In the Republic of Moldova, the project is implemented by the National School of Public Health Management.

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Executive summary

The Project *Action for Health and Equity - Addressing Medical Deserts (AHEAD)* addresses the challenge of medical deserts and medical desertification in Europe in search of viable solutions and tools to reduce health inequalities. The Project is carried out in Italy, Moldova, the Netherlands, Romania and Serbia. The countries where the project acts were carefully selected to highlight different manifestations of medical deserts. The approach applied in this Project will build knowledge, encourage (digital) innovation in health service delivery to improve access, and apply a participatory approach to public health policymaking. Project beneficiaries are health policymakers, patients' organizations, health professionals' organizations, health professionals and affected communities. Our ultimate impact at society and EU level is better access to health services, especially in underserved areas, and more equitable access to sufficient, skilled and motivated health workers, starting with the countries involved in the Project.

The AHEAD Project activities include literature review and desk research; participatory action research; multi-stakeholder consensus-building dialogues; high-level policy dialogues at the national and EU level. The consortium will produce several deliverables: country research and policy briefs; a set of contextualized and feasible policy solutions to address medical deserts in the countries; an improved definition and taxonomy of medical deserts (MD); a medical deserts diagnostic tool; and a tested and replicable approach for participatory health policymaking.

Based on the findings of the literature review, the current country research report for the Republic of Moldova highlights the results of the desk and field research from 15 in-depth interviews in 6 rayons of the country. The findings of this study revealed the low awareness on the meaning, implication and elements of being a medical desert, which was visible in the in-depth interviews. Whilst analyzing the dimensions of a medical desert, the data suggested that distance, densities and travel times considered the main components. In the end, several potential solutions for mitigating MD were identified, including: a mix of financial interventions, institutional arrangements, and arguments with respect to health workforce.

Introduction

The accepted definition of Medical Deserts (MD) in the academics of the Republic of Moldova states that “Medical desert is an area where no adequate access to health services is granted and/or long distances to health services, including:

- Insufficient or no health professionals within an area;
- Difficulties in attracting young professionals to an area;
- Excess of retiring family doctors from an area;
- Long distances to cover for patients in search of a health care practitioner or a health institution in an area;
- Long waiting time for patients in search of a health service.”

Literature review process and analysis of main policies affecting and addressing medical deserts found that the main pillars of access to healthcare in the Republic of Moldova were the following:

- Availability of health services;
- Location accessibility;
- Proper organization of healthcare services;
- Convenient working hours;
- Acceptability of health services and met expectations.

The desk review process identified that medical deserts is associated with several barriers of a certain population to access health services, that can be used in measuring the severity of the “desertification”:

- Physical barriers;
- Social barriers;
- Health policies related barriers.

Country Context

1. Population

Moldova's working-age population is getting smaller, due to both demographic factors and outmigration. The population of the Republic of Moldova is steadily declining in all age groups. While the total number of population calculated by National Bureau of Statistics counts around 3.5 million, the latest statistical data recalculated by applying the international definition of habitual residence shows a dangerous trend towards decline in total population (from 2,844,673 in 2015 to 2,597,107 at the beginning of 2021) (Table 1), (Figure 1):

Table 1 Total population, population with habitual residence, at the beginning of the year, by areas, Republic of Moldova

Year	Country overall	Urban	Rural	MD residence
2015	3 555 159	1 507 265	2 047 894	2 844 673
2016	3 553 056	1 511 051	2 042 005	2 824 387
2017	3 550 852	1 516 813	2 034 039	2 779 952
2018	3 547 539	1 521 894	2 025 645	2 730 364
2019	3 542 708	1 527 483	2 015 225	2 686 064
2020	N/A	N/A	N/A	2 640 438
2021	N/A	N/A	N/A	2 626 900
2022	N/A	N/A	N/A	2 604 000

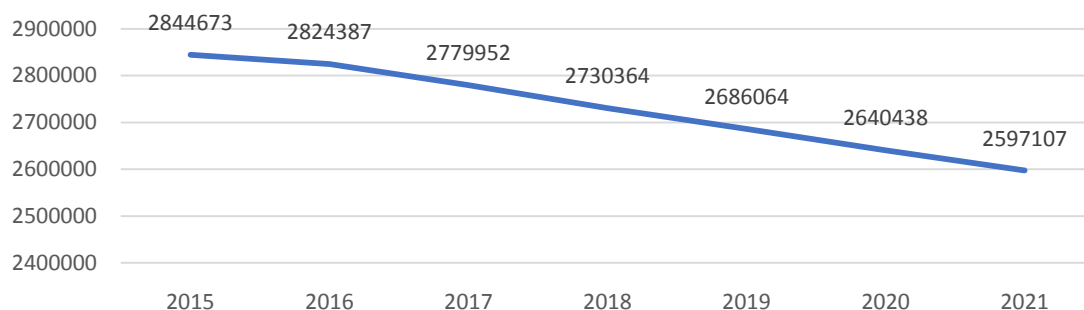


Figure 1 Population with habitual residence, at the beginning of the year

Source: National Bureau of Statistics

At the same time, the number of working age population in all age categories is constantly decreasing. Negative natural growth (-4394 in 2019) threatens to ensure long-term sustainable development (Figure 2). The trend continued in 2020: natural increase in the Republic of Moldova registered a negative growth of -9882.

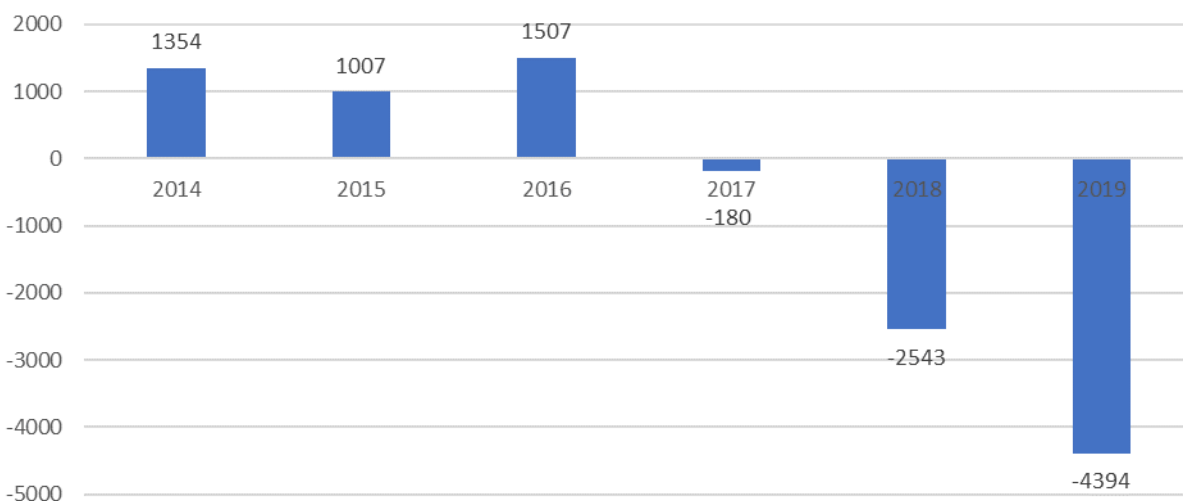


Figure 2 Natural movement of the population (Source: National Bureau of Statistics)

2. Migration

In 2020, net migration rate for Republic of Moldova was -0.34 migrants per thousand population. Though Republic of Moldova's net migration rate fluctuated substantially in recent years, it tended to decrease through 1975 - 2020 period ending at -0.34 migrants per thousand population in 2020¹.

In 2017, net migration in Moldova was at -6.935 (Net migration is the net total of migrants during the period, that is, the total number of immigrants less the annual number of emigrants, including both citizens and noncitizens)². Large outmigration flows of the working age population have contributed to a shrinking workforce (Table 2).

Table 2 Unemployment rate by area, annual average (Source: National Bureau of Statistics)

	2019	2020	2021
Whole country	5.1	3.8	3.2
Urban	4.9	4.5	3.2
Rural	5.3	3.3	3.2

¹<https://knoema.com/atlas/Republic-of-Moldova/topics/Demographics/Population/Net-migration-rate#:~:text=In%202020%2C%20net%20migration%20rate,per%20thousand%20population%20in%202020.>

²<https://data.worldbank.org/indicator/SM.POP.NETM?end=2017&locations=MD&start=2002>

Outmigration to OECD countries is increasing. An estimated 21,800 citizens leave Moldova each year for OECD countries (2007-2017 average). In 2017, about 16,400 people were estimated to have migrated to OECD countries (Figure 3). Since 28 April 2014 more than 2.4 million citizens of the Republic of Moldova benefited from liberalized visa regime with the European Union using terrestrial and aerial exit points, including 592,659 citizens in the 26-35 age group, 546,022 in the 46+ years age group and 451,108 in the 36-45 age group (border.gov.md, data for April 2022).

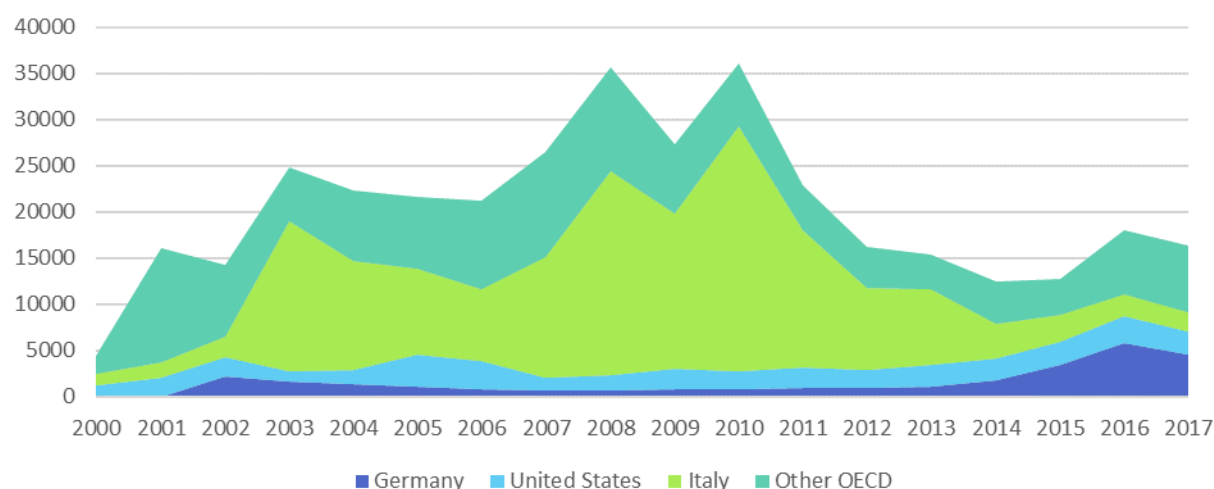


Figure 3 Annual outflows of Moldovan nationals to OECD countries, 2007-2017

The most frequent OECD destination country for Moldovans is Germany (28 percent of total outflows in 2017), followed by Turkey, the United States, and Italy (Figure 4) (OECD 2019).

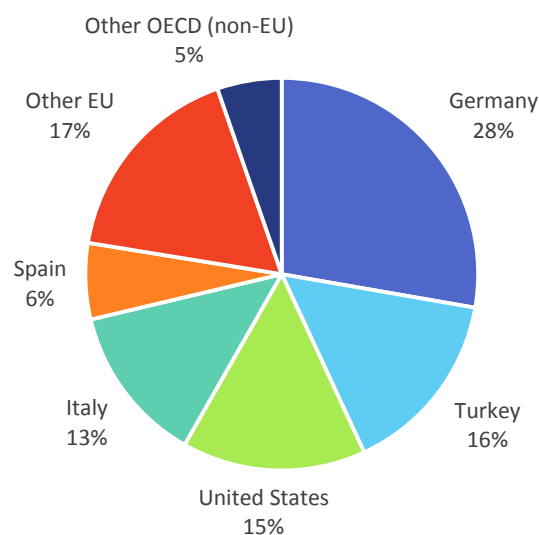


Figure 4 Share of total outflow of Moldovan nationals to OECD countries, by country of destination, 2017

The contribution of the Moldovan diaspora to the economy has been decreasing but remains high: remittances fell from a peak of 34.5 percent of GDP in 2006 to 16.0 percent in 2018 (World Bank 2019), possibly because the nature of migration flows has been changing from more circular/temporary to long-term.

3. Country specific social factors that may be relevant to medical deserts.

Republic of Moldova is a multi-ethnic country. There are some regions where different ethnical groups prevail (i.e. TAU Gagauzia – with predominant Gagauz ethnicity, Soroca city – with Roma group ethnicity etc.) but there are no studies or evidences that health care services or access to health workers in those regions/cities/territories are less comparing with other regions. Informal payments, according to the „*Framework for addressing out-of-pocket and informal payments for health services in the Republic of Moldova*”³ facilitation payments, conditioned payments and gifts are not related with the shortage of health workers.

Another country specific problem is the Transnistria conflict: an ongoing frozen conflict between Moldova and unrecognized state of Transnistria. With a total area of 4163 square km and almost 350,000 population, this region can be considered a potential medical desert area. Insufficient data, lack of regulation and control from national authorities put under question the real number of health workforce available within the region and population’s access to health services.

4. Political context

The Republic of Moldova, like any country in the region, is aligned with the health policies promoted by the WHO, especially equitable access to health services. The health system is currently in the process of developing a new 2030 National Health Strategy, which should be approved soon.

On Human Resources for Health, one of the most important actions taken by Government on HRH policy was the *Government Decision nr. 452/2016 the Human Resources for Health Development Strategy for 2016-2025*⁴. The document has 5 main objectives:

- Strengthening the HRH governance at all levels;
- Preparing a rational number of health workers, with appropriate skills, according to the health system demand;
- Implementing an efficient personnel management within the medical institution;
- Ensuring the sustainable financing for training, motivation and development of HRH;
- Development and implementation of efficient retention policies and control of medical staff mobility.

³ https://www.euro.who.int/_data/assets/pdf_file/0009/256158/Framework-for-addressing-out-of-pocket-and-informal-payments-for-health-services-in-the-Republic-of-Moldova.pdf

⁴ https://www.legis.md/cautare/getResults?doc_id=92216&lang=ro

An overview of other recent and planned policy actions undertaken by the Government regarding health workforce mobility and migration is listed below (Table 3).

Table 3 Overview of recent and planned policy actions

Policy areas	Actions
a) Education policy, planning and financing	<ul style="list-style-type: none"> - In the last few years, SUMF “Nicolae Testemițanu” implemented 4 new educational programs: Optometry, Nursing, Technician Radiologist and, Public Health. All these are 4 years study programs; - Financial autonomy allows SUMF and Medical Colleges to develop new curricula, new programs, to continue the research and improve academic results;
b) Health policy and financing	<ul style="list-style-type: none"> - Recently (in 2016) was implemented performance-based payment mechanism for all medical staff: this increased the salary for young practitioners up to 25 percent and made transparency in salary calculations; - The salaries for all medical staff also increased by up to 20 percent.
c) Health workforce planning, entry into health labor market, and employment conditions	<ul style="list-style-type: none"> - Authorities have implemented a binding mechanism for postgraduates, which studied using the state budget allocations. This consists of 3 years work according to the Ministry of Health, Labor and Social Protection demand. In case they didn't accept to work they must return all the state investments in their education. - For young specialists (doctors and nurses) which accept to work in rural area, Government allocates 120,000 MDL for doctors (approximate 7200 USD) and 90,000 MDL for nurses (5400 USD); - For doctors and nurses mentioned above, the local authorities provide housing, and the Ministry pay the monthly facilities (electricity); - Employers pay for Continuing Medical Education courses.
d) Quality assurance in education and in health (licensing, etc.)	<ul style="list-style-type: none"> - All educational programs in the SUMF past the evaluation of the National Agency for Quality Assurance in Education and Research; - Medical Colleges have internal Quality Management System.
e) Regulatory framework for employment and migration	<ul style="list-style-type: none"> - Improving working conditions in rural Health Centers and overall medical institutions; - New equipment and technologies; - The Governmental Decision nr. 936/2013 on bilateral Agreement in the field of medical Migration;

	- Free courses (paid by employer) for returnees' doctors and nurses from abroad;
f) Monitoring and evaluation of mobility (e.g. WHO/OECD)	<ul style="list-style-type: none"> - Annual reporting to WHO on medical migration, according to the WHO Global Code of International Recruitment of Health Workers; - Registering all the doctors and nurses which request Certificates of Good standing to monitor the Intention to leave;
g) Bilateral/multilateral agreements and investments	- All initiated bilateral discussions on Bilateral agreement (with Germany, Italy, Romania, Israel) had not produced a significant result;
h) Public wage policy	- Recent increases in base salaries and additional remunerations. Started in December 2018 and continued in September 2020, the reform of the remuneration system of the health professionals assigned to budgetary institutions produced the much awaited salary increase for doctors and medical personnel from National Agency for Public Health, HWF within kinder gardens and schools and health institutions attached to other ministries besides the Ministry of Health. Although there was a 30% to 60% increase during the 2018-2020 period, salaries of health personnel remain lower than in the EU, thus increasing the HRH's intention to leave from the national health system.

5. Economic context

Despite a solid economic performance over the past two decades, Moldova still remains among the poorest countries in Europe. Although a growth model reliant on remittance-induced consumption has generated high growth and reduced poverty, it had become less sustainable well before the COVID-19 pandemic. The decline in remittances, combined with a shrinking and aging population has resulted in low productivity growth. A significant number of the lower-income population has become dependent on pensions and social assistance.

The pandemic, the energy crisis, and most recently the refugee crisis starkly exposed the vulnerabilities of this growth model to shocks. Moldova is likely to be one of the countries most affected by the conflict not only because of its physical proximity to the war but also because of its inherent vulnerabilities as a small, landlocked economy with close linkages to both Ukraine and Russia.

The annual inflation rate in Moldova accelerated to an all-time high of 27.1 percent in April 2022 as prices climbed further for food (30.2 percent); non-food products (19 percent) and services (34.4 percent). Although this is the highest inflation rate since comparable records began in 2007, the rate is expected to climb to more than 30 percent in October 2022 (National Bank of Moldova).

The influx of refugees to Moldova has been substantial, totaling the equivalent of roughly 15 percent of Moldova's population crossing the border since the onset of the war. Although more than three-quarters have transited to the European Union, the remaining influx of refugees will likely have additional fiscal costs, squeezing resources for long-term development priorities. The large wave of refugees could also create a challenging socioeconomic environment in the medium term, especially if many migrants remain but fail to find employment opportunities. As of May 2022, more than 89,000 migrants (including more than 36,000 children) were staying in the Republic of Moldova as the ongoing war put more pressure on the neighboring Ukraine and increase the migrant flow towards Moldova.

Heavy reliance on imports to meet food and energy needs has left Moldova vulnerable to disruptions in the supply of food, energy, and commodity imports from Ukraine and Russia. Additionally, Moldova is critically reliant on natural gas imported from Russia, including for powering its energy needs. Import disruptions are expected to increase price pressures, in turn eroding the competitiveness of firms and household incomes, especially for the poor.

As economic activity shrinks due to shocks from the war and the ongoing impacts of the COVID-19 pandemic, the Government, which has a strong mandate, parliamentary support, and trust among citizens and international partners, must find ways to mitigate the economic impact while maintaining momentum on the long-term agenda. At the current economic juncture, it is paramount that short-term recovery measures are complemented by long-term reforms that will help steer the economy away from the current economic model.

Although Moldova's GDP (total and per capita) is increasing on a yearly basis (Table 4), the most important economic indicators (if calculated using USD) does not seem to show real progress. The conversion rate of the national currency to USD (Table 4) shows the vulnerability to external shocks of the national currency. In fact, in June 2022 the USD/MDL conversion rate reached the 19.03 value, further increasing the already high living costs.

Table 4 Economic indicators, Republic of Moldova

	2015	2016	2017	2018	2019	2020
GDP, total, thousand lei	145.753.642	160.814.564	178.880.890	192.508.553	210.378.059	205.432.298
Annual growth	-	10,3	11,2	7,6	9,3	-2,4
GDP, per capita	51.237,4	56.937,9	64.346,8	70.506,6	78.322,1	77.701,0
USD/MDL Exchange rate	15.57	19.68	20.12	17.06	17.16	17,41
Gini coefficient	27	26.3	25.9	25.7	26.0	-

6. Technological context

Internet in Moldova is one of the fastest and least expensive in the world. The country ranks 3rd in the world by gigabit coverage with around 90% of the population having the option to subscribe to a gigabit plan. The overall infrastructure is well developed which allows many users to experience good quality services throughout the country. However, despite high speeds and cheap prices, the penetration level is quite low when compared with many EU or CIS countries. In 2018, 49% of Moldovan households had broadband access. Total number of access point to internet through 2G, 3G and 4G mobile technologies in 2019 was little above the 2144000 mark (+11.3% from 2018).⁵

7. Environmental context

Total land area of the country is 33,851 square km. The country is landlocked, most of the country is hilly, but the elevations never exceed 430 m. The environment of Moldova suffered extreme degradation during the Soviet period, when industrial and agricultural development proceeded without regard for environmental protection. Excessive use of pesticides resulted in heavily polluted topsoil, and industries lacked emission controls.

In the Republic of Moldova, the access to a healthcare provider is difficult in rural areas due to less developed infrastructure, quality of roads and undeveloped access routes. Therefore, the challenges related to access to a healthcare provider is more related to time spent instead of distance in km.

8. Media analysis

In the Republic of Moldova, one of the main problems regarding human resources in health is the geographical distribution – to be precise, excess of health workforce in urban areas and lack of health workers in rural areas: *“We can’t say that we don’t have enough doctors. The biggest challenge is the geographical distribution of them throughout the country. We have too many doctors in cities and very low numbers in villages and rural areas.”* Insufficient numbers of health workers is registered in many specialties, but one of the main problems is identified in the primary health care sector in rural areas: e.g. in 2003, in Republic of Moldova there were 2.112 family doctors, in 2012 – 1.853 family doctors and, in 2019 there were only 1.687 family doctors in the country.

Daily activities of a family doctor are by default time consuming and exceed by far the standardized 1.500 persons per family doctor: in some areas a family doctor has 1.900 persons in their district; in other areas a family doctor can have up to 3.000 persons to provide health care for. Overall, the average age of the family doctors in the Republic of Moldova is increasing, with

⁵https://en.wikipedia.org/wiki/Internet_in_Moldova#:~:text=Internet%20in%20Moldova%20is%20one,subscribe%20to%20a%20gigabit%20plan

72% of the presenting symptoms of chronic stress, and 78% of them presenting signs of chronic fatigue.

For a major part of rural population, access to their family doctor is available only on 1 or 2 days per week, with long waiting time and no assurance to even receive the requested health services in the same day. Per country, there are more than 200 rural areas with no family doctor at place and more than 300 open vacancies needed to even try to grant access to health care services for each citizen.

“How do we manage this? We use only what we have, and if no professionals are available, we can’t offer the required health services to all patients in that area, thus not granting the right to access the healthcare services in a proper way. Who is accountable for this? The Ministry of Health? No! Because the health system felt victim to political games and failed to assure the adequate numbers of health professionals and their even geographical distribution.”

According to the data of Trade Union “Sanatatea”, in 2020, almost 25% of professionally active doctors and 16% of nurses and midwives were officially retired, but still working in order to cover the open vacancies. Students and interns are used to fill the gaps, but, eventually at least 2/3 of them leave the Republic of Moldova’s health system.

Lack of strategic policies in managing human resources in health, very low levels of incentives and inadequate working conditions, low levels of infrastructure development in rural areas, no targeted incentives towards assuring the young professional with a permanent place to live or his own home in rural area, insufficient personal protection equipment during the COVID-19 pandemic, all of this and more push the health professionals from Moldova to realize their intention to leave the health system from Moldova towards other sectors within the country or to even other countries.

Health system and health status of the population

1. Life expectancy at birth

Although recently life expectancy at birth reached 70 years (Table 5), another social issue is demanding attention: number of live-births in the country. In 2019 there were 32,423 live-births in total, in 2020 – 30,834 and in 2021, only 29,230 live-births were registered in the whole country. This is more than a 25 percent decrease in live-births compared to the year 2010 or 10 000 less live-births than 1 decade ago (National Bureau of Statistics).

Table 5 Life expectancy, Republic of Moldova, 2016-2020

Year	Life expectancy at birth
2016	69.9
2017	70.8
2018	70.6
2019	70.9
2020	69.8

2. Infant mortality rate (per 1000 live-births) and under-5 mortality rate (per 1000 live-births) in the Republic of Moldova

The infant mortality rate has been falling steadily since the mid-1990s reaching 11.8 per 1000 live births in 2010, which is close to average for countries of the CIS (11.7 per 1000 live births in 2010), but still more than double the European Union average of 4.2 per 1000 live births in 2010. Maternal mortality levels have fluctuated widely, reaching a low of 16 per 100 000 births in 2006 and 21 maternal deaths per 100 000 live births in 2013. This is almost double the average for countries of the European Union, which were 6.1 in 2010. However, actual numbers are low (18 in 2010, 7 in 2009) and as there are only around 30 000 births annually each tragic death increases the maternal mortality rate substantially.

Table 6 Infant mortality, Republic of Moldova (Source: National Public Health Agency data management department)

Year	Infant mortality rate (per 1000 live-births)
2017	9.7
2018	10.0
2019	8.6
2020	8.8
2021 (preliminary data)	9.7

Table 7 Under-5 mortality rate, Republic of Moldova (Source: National Public Health Agency data management department)

Year	Under 5 Mortality Rate
2017	11.4
2018	11.8
2019	10.2
2020	10.5
2021 (preliminary data)	11.2

3. Top 5 causes of death in the last available year

The Republic of Moldova has a double epidemiological burden as rates of both communicable and non-communicable diseases have steadily increased since independence. The main causes of death in the Republic of Moldova are diseases of the circulatory system followed by cancer and diseases of the digestive system. Many of these deaths can be attributed to very heavy alcohol and tobacco consumption – 57.6% of total male mortality and 62.3% of female mortality in 2010 could be attributed to smoking-related causes while 18.8% of male mortality and 13.7% of female mortality were related to alcohol consumption. Though incidence of chronic liver disease and cirrhosis has decreased over the last five years, this remains a very significant overall cause of mortality in the Republic of Moldova (118.95 per population of 100,000 men and 89.82 per population of 100,000 women in 2010).

Table 8 Top 5 causes of deaths, Republic of Moldova. (Source: National Public Health Agency)

	2017	2018	2019	2020	2021 (preliminary data)
	per 100 000				
Heart disease	605,4	609,4	606,8	645,2	688,7
Cancer	173,3	173,9	174,4	168,5	164,6
Digestive	87,0	95,5	92,0	87,9	82,0
Accidents	106,4	107,1	103,7	91,4	54,7
Respiratory	45,5	44,2	44,9	46,2	56,6

4. COVID-19

The COVID-19 pandemic has led to a dramatic loss of human lives worldwide and is an unprecedented challenge to public health, food and work systems worldwide. In the Republic of Moldova the pandemic hit hard in the first phase with numerous restrictions imposed, several lockdowns and limitations affecting the whole population of the country. With more than half a million cases registered and more than 11,500 Covid-19 related deaths registered (Table 9), the Republic of Moldova is currently trying hard to reach the 70% overall population vaccination rate recommended by the WHO.

Table 9 COVID-19 total number of cases, total deaths, vaccination rate, Republic of Moldova.⁶

Item	As of 04 June 2022
Total number of cases	519,001
Total deaths	11,544
Total persons vaccinated (COVID-19, fully vaccinated)	1,063,425
Vaccination rate (complete vaccination) in overall population	30% (as of 12.04.2022)

Although the COVID-19 pandemic is still ongoing, some studies already provided a glance of the impact of the pandemic on the labor market and living standards of households (National Bureau of Statistics, UNECE online meetings):

- 39,6% of women and 38% of men felt depression, stress, anxiety as a result of Covid-19;
- 14,7 of women and 16,1% of men faced difficulties accessing the necessary medical services;
- A medium of 33% of citizens faced financial difficulties (drop or loss of income from work activity and/or of remittances from abroad;
- At least 5% of the population had difficulties accessing distance learning services (lack of personal computer and/or limited internet access;
- At least 20% of the population were forced to have an unpaid leave, faced cessation of activity or technical unemployment;

5. Healthcare system

Type of health system

The Republic of Moldova has a universal health care system. The reform of health financing in the Republic of Moldova began in earnest in 2004 with the introduction of a mandatory health

⁶ <https://gismoldova.maps.arcgis.com/apps/opsdashboard/index.html#/d274da857ed345efa66e1fbc959b021b>

insurance (MHI) system. Since then, MHI has become a sustainable financing mechanism that has improved the technical and allocative efficiency of the system as well as overall transparency.

Governance

Decentralized governance and local autonomy is a priority of the actual Government of the Republic of Moldova. It is assumed that local authorities know best what is requested by the population at places and can also provide the best solutions. Instead, central authorities will keep the control and regulatory functions in almost all areas. The same can be told about the health system governance.

Service delivery; health care providers

Primary health care (PHC) is the frontline of the health system and is in essence the access to a family doctor or/and to a general practitioner's office of the population. PHC is mostly offered by family doctors and their nurses. In some PHC institutions can provide access to specialized doctors and healthcare specialists in laboratory diagnostics.

Table 10 Health care providers, Republic of Moldova.

	2016	2017	2018	2019	2020
Total numbers of health institutions (public)	367	367	366	393	391
Total numbers of health institutions (including private)	1034	1104	1074	1075	1062

Table 11 Health related statistical data, Republic of Moldova.

Source: National Public Health Agency data management department

Total	2017		2018		2019		2020		2021	
	abs.	per 10 000	abs.	per 10 000	abs.	per 10 000	abs.	per 10 000	abs.	per 10 000
Hospital beds	18398	51,9	18138	51,2	18042	50,9	17168	48,5	17329	48,9
GPs	13021	36.7	12635	35.6	12552	35.4	12394	35.0	12214	34.5
Family doctors	1722	4.8	1682	4.7	1687	4.7	1683	4.7	1656	4.7
Family doctor's nurses	4195	11.8	4172	11.9	4038	11.4	3989	11.3	4002	11.3
Community nurses	-	-	-	-	228	0.6	279	0.8	300	0.8
Doctors (private sector)	1757	-	1869	-	1941	-	2020	-	1917	-

Health care in Moldova has known dynamic development in the past years, the hospitals being equipped with ultra-modern equipment, the new surgical blocks and general medical departments being built in Chisinau - capital city. Basic health benefit package covers a comprehensive list of health services that are included in table 12.

Table 12 List of health services from basic health benefit package, Moldova.⁷

Item	Can be accessed by a citizen with health policy insurance or included in the list of persons insured by the Government	Can be accessed by a citizen without health policy insurance or not included in the list of persons insured by the Government
Emergencies (911 service)	+	+
Access to a family doctor and/or a GP	+	+
Access to specialists in the PHC system	+	-
Drug prescription (compensated by the Government)	+	-
Hospital based health services	+	-
High performance services (CT, MRI etc.)	+	-
Homecare health services	+	-

Health financing

Table 13 Some economic welfare related data, Republic of Moldova

	2015	2016	2017	2018	2019	2020
Public health expenditure as % of GDP	4,9%	4,8%	4,6%	3,9%	3,9%	4,5%
Total health expenditure per capita (PPP)	3.478,3	3.705,3	3.809,1	3.817,8	5.060,9	5.502,2
Health expenditure per category of healthcare providers (thousand lei)						
.--- hospitals	2.968.397,45	3.411.000,50	3.585.774,26	3.832.042,30	4.095.419,30	4.792.462,62
.--- primary care	2.078.086,82	2.005.909,66	2.245.847,12	1.506.126,98	1.629.302,18	1.782.525,95
.--- ambulatory	494.484,36	586.759,78	613.563,36	1.262.545,72	1.897.166,82	1.345.839,46
.--- medicines,	4.401.970,07	4.765.210,28	4.556.048,59	4.174.095,50	3.318.365,26	3.305.687,77
Out of pocket spending on health care per capita	1.621,4	1.651,3	1.612,0	1.512,8	1.810,4	1.635,8

⁷ https://www.legis.md/cautare/getResults?doc_id=126829&lang=ro#

Methodology of mapping medical deserts in the Republic of Moldova

Overall topic of the study was health workforce in the primary health care sector in the Republic of Moldova, with two main study directions to focus on: (i) desk review of all available data related to family doctors' office and (ii) in-depth interviews with national and local stakeholders.

For in-depth interviews 6 rayons (territorial administrative unit) were selected as follows: Falesti, Ungheni, Hincesti, Leova, Cantemir and Rezina. The main criterion for selection was the overall number of doctors per 10,000 population to be much lower than the national average. In the case of these 6 rayons the chosen indicator was ranging from 2.4 to 3.0.

Within these 6 rayons 15 stakeholders were selected for in-depth interviews:

- 6 managers of PHC centers;
- 6 representatives from Local Administrative Authorities;
- 1 person from Trade Union „Sanatatea”;
- 1 person from National Health Insurance Company;
- 2 representatives from Central Healthcare Authorities (Ministry of Health, NAPH).

Limitations of the study:

- No clear definition on MD;
- No set of indicators to define an area as a MD;
- Continuous change of stakeholders at both national and regional level;
- COVID-19 related communication and travel limitations.

Results

National statistical data collection and analysis of regional and international available data were performed during the study that produced interesting and comprehensive results.

More than half of the Member States of the European Union record health system accessibility problems for rural areas and peripheral populations (Figure 5).

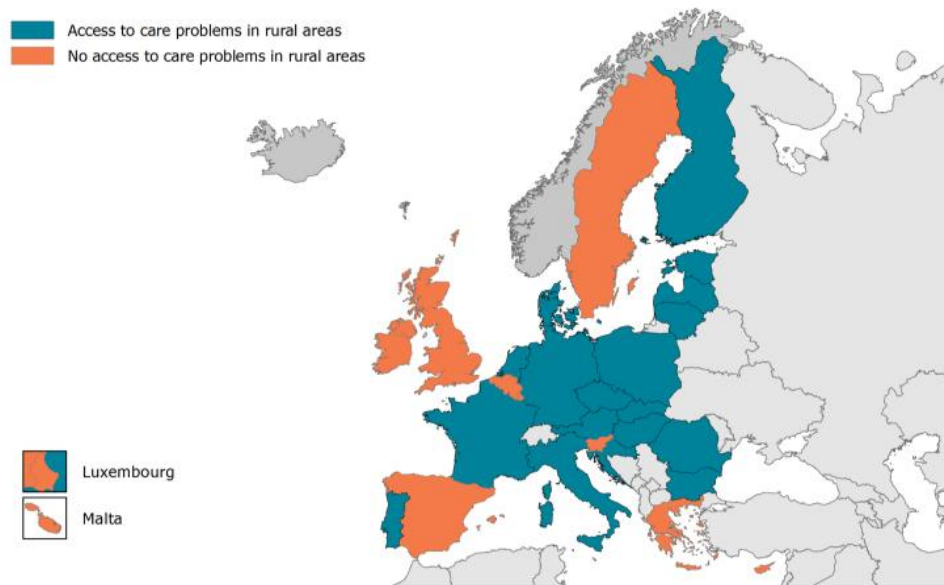


Figure 5 Density of PHC professionals in the European Union, data for 2018.

One important indicator of medical deserts' impact on health systems is the “unmet needs”. The Eurobarometer report identified several “unmet needs” within the EU Member States’ health systems: distance, waiting lists and costs (Figure 6).

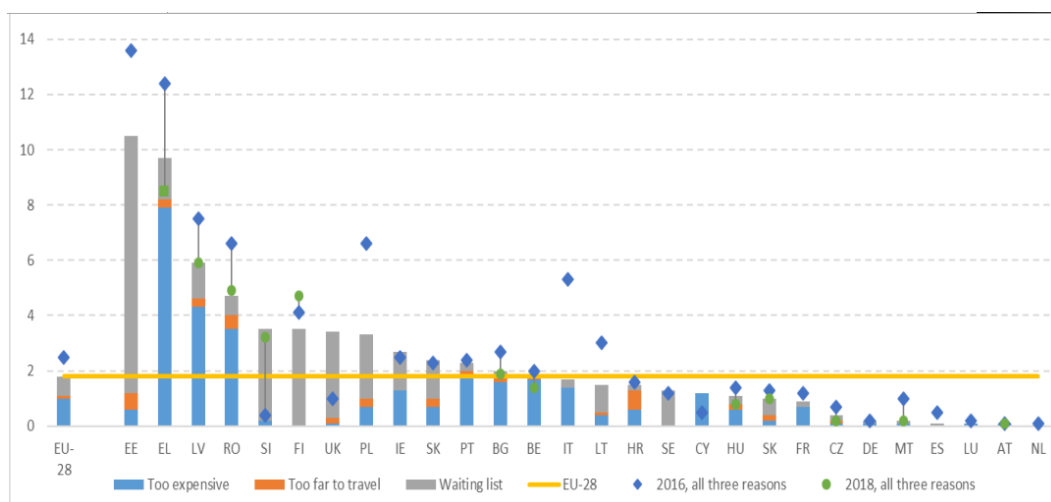


Figure 6 Main “unmet needs”, European Union Eurobarometer report

Family doctors' characteristics range from a country to another within EU, including age distribution: in Malta, United Kingdom and Romania most physicians are in the 35-54 age bracket, in Belgium and Luxemburg – 35-64 years age bracket (Figure 7). On the other hand, Lithuania and Hungary have more than 4% of physicians older than 75 years.

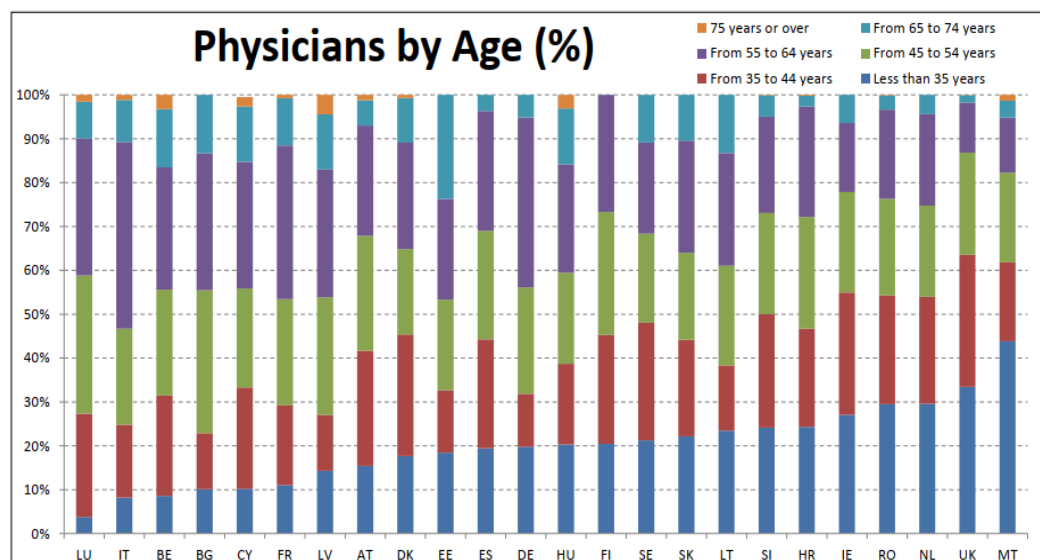


Figure 7 Age distribution of physicians by age, EU countries

Primary health care is one of the main pillars of the health system in the Republic of Moldova. PHC is the main access point of the population to health services and is strictly regulated by different national laws. In Moldova the standard PHC team is consisted of 1 family doctor and 2 family doctor's nurses and cope with at least 80-85% of population's health issues. Although the Ministry of Health Order nr.1582 from 30.12.2013 states that 1500 population needs to have at least one family doctor attributed to, overall numbers of FD remain below UE average (7.96 in 2011) and national recommendations of at least 6,6 per 10 000 population.

In 2020, at national level there were 1595 professionally active family doctors (4.5 per 10 000) and 3908 FD's nurses (11 per 10 000) reported. In depth analysis of the data shows the uneven geographical distribution of these professionals across the country (Table 14, Figure 8 and Figure 9) with relative excess of FD in major cities and other urban areas and lack of FD's nurses in their team. Interesting enough is that the situation is vice versa when we focus on FD's nurses.

Year 2020	North	Center	South
Family doctors, per 10 000 population	5.0	3.7	2.7
Family doctors' nurses, per 10 000 population	38.6	33.5	27.5

Table 14 Geographical distribution of FD's office health workforce, Republic of Moldova

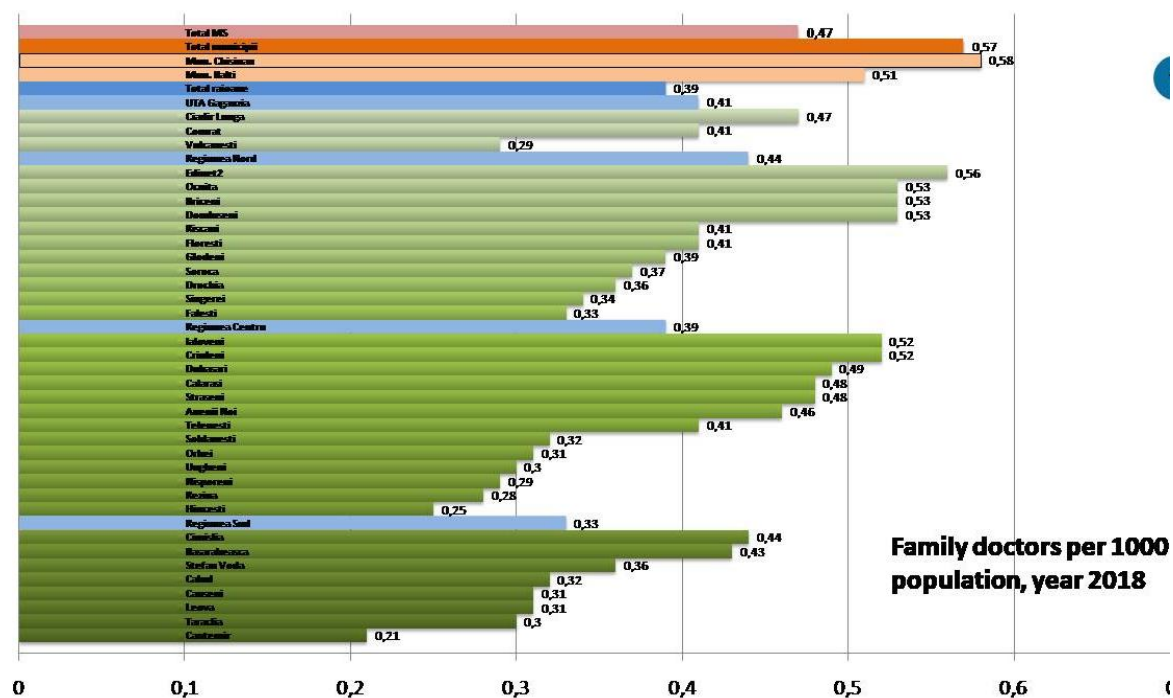


Figure 8 Availability per 1000 population of FD, by major counties of the Republic of Moldova

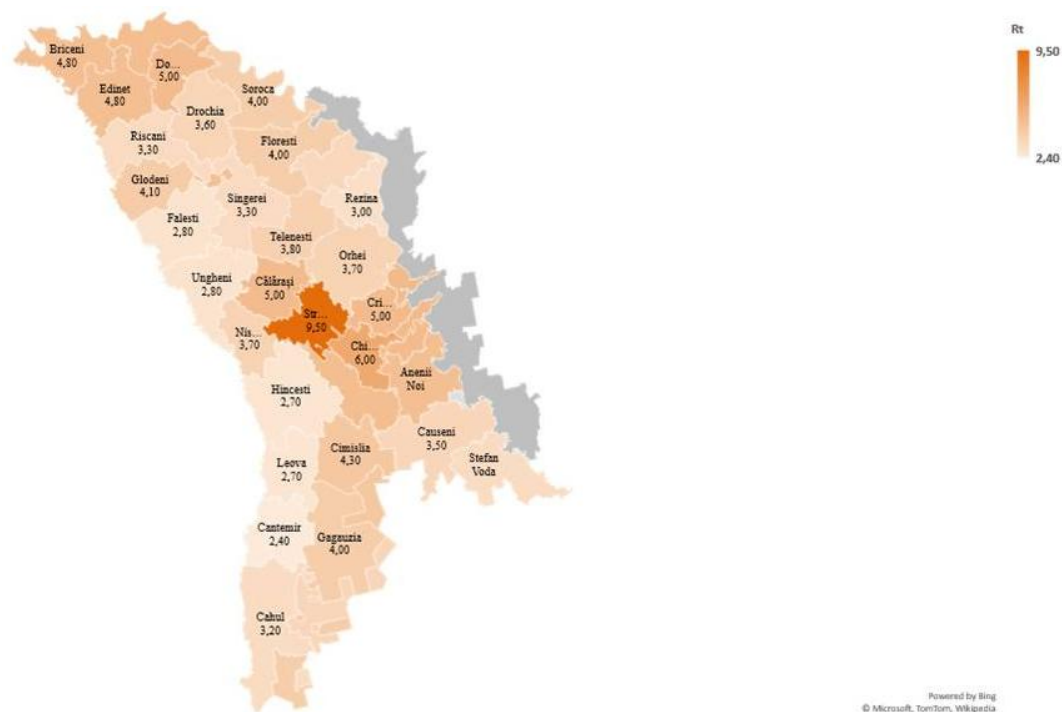


Figure 9 Distribution of FDs in the Republic of Moldova, year 2018

As an element of the Medical Desert phenomenon in the Primary health care system is the age of a FD. The research found that most FD are within the 55-64 age range (30%) with additional 27,7% in the 45-54 age range with a major concern being the 10,1% of those FD older than 65 years. These numbers show that in the nearest future the PHC will face major challenges in assuring proper availability of PHC services to overall population, with rural areas to be most affected by this.

One solution for this is increasing the overall numbers of FD trained within the SUMF “Nicolae Testemițanu”. Unfortunately, the overall numbers of residents that choose this professional domain remain way below the requested number (Table 15) and the ones that opt for this specialization are not eager to choose rural areas for main place of professional activity (Figure 10).

	2018	2019	2020	2021
Overall entry to FD training (residents first year)	28	26	16	11
Overall graduates of FD training (acquired diploma)	70	41	34	26

Table 15 Young professionals choosing family doctor's professional activity

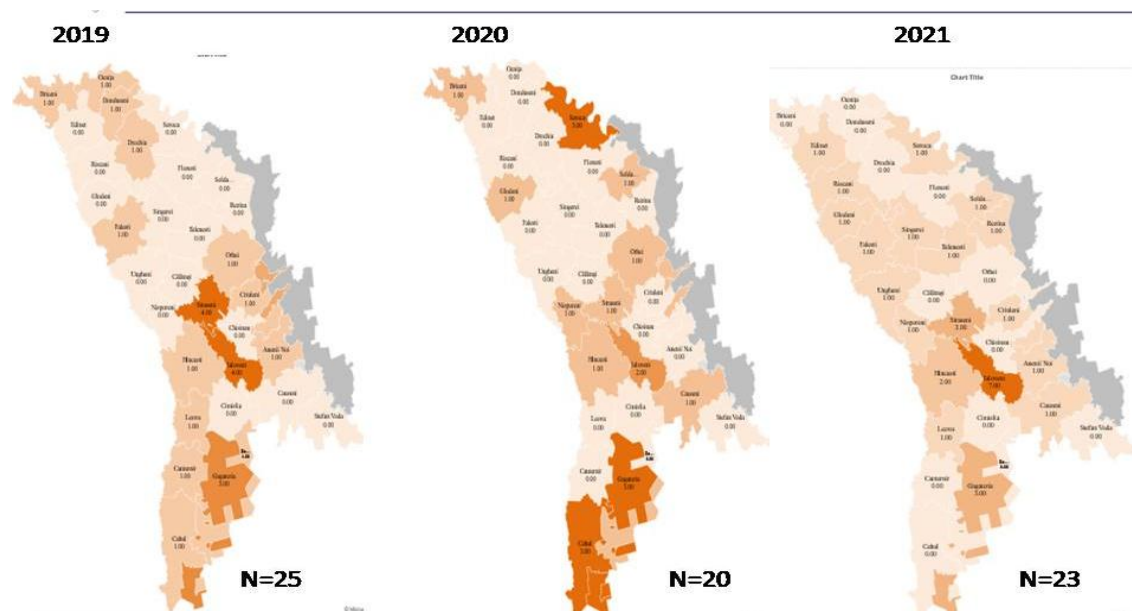


Figure 10 Young family doctors, by area of primary distribution by Ministry of Health

Voices of stakeholders

This chapter exploits the results from qualitative in-depth interviews with stakeholders, attempting to set up a broad context in which the medical desertification is perceived at national and local level, and to illustrate the extent to which the issue is present on the public agenda, under which form, and how it is defined by the interviewees. During face 2 face meetings and interviews of national and local authorities several relevant opinions and statements were identified:

At national level:

- “The term medical desert is a relative new one for authorities. Although some information on availability, distribution and age of the FD are available there is a serious lack of mitigation solutions that can be used at central level”;
- “Due to low quality of roads and low levels of development of infrastructure in rural areas the accessibility to healthcare providers are better evaluated not by distance (km from home to FD) but rather in time spent for accessing a health service”;
- “It remains to decide at which level a MD area should be identified as a potential risk area: national, regional or local”.

At local level:

- “A medical desert area is where population have insufficient doctors, health institutions”;
- “The MD phenomenon is mainly linked to 2 major factors: decrease of the number of FD available and urbanization of healthcare system: increase of urban health institutions and decrease of rural ones. In this way, the patients are offered 2 options: to cover longer distances and to wait more for a FD’s consultation or to request more frequently emergency healthcare services, both of them not sustainable in the long term”;
- “It is time to think for a post diploma policy documents to be implemented that will allow more geographically even distribution of FD offices across the country. An urgent increase in salaries is mandatory in order to mitigate MD”.

At PHC level:

- “For a person it is difficult to travel 10 to 60 km for a regular medical checkup at the closest available FD office. It is especially difficult for older patients with different chronic diseases that need to be closely and regularly monitored by their FD”;
- “Improvement of economic, social and political situation in the country will help mitigate the MD phenomenon. More involvement of local authorities is needed in order to increase access to healthcare for the population in the rural area”;
- “The Ministry of Health should be more decisive in granting universal health coverage in rural areas. More regulatory documents and policies are required”.

Conclusion and policy implications

The country context indicated that, in the past years, the economy of the Republic of Moldova has recorded an unstable economic growth. Rising household incomes as well as a sustained poverty reduction was always a promise, but never actually achieved by the Government. The digitalization of economy is visible in terms of the technological factors, as access to smartphones and access to internet has considerably increased over the last 5 years. Despite the economic growth, health spending has remained very low, which is reflected in the health status of the population and in the dramatically low life expectancy compared to the EU level.

1. Medical deserts phenomenon remain a common issue for all health systems, still at this point no consensus on definitions and MD's indicators could be reached at national, regional or global level;
2. Main factors that lead to MD are very different and heavily depend on national context: distance and time, urban/rural differences in access to healthcare, availability of FDs and their age, lack of health professionals and their uneven geographical distribution;
3. Rural population of the Republic of Moldova has low access to FD's office, some villages' availability of health professionals reached critical levels due to low attractiveness for young professionals and lack of financial incentives and professional development opportunities in these areas;
4. National stakeholders are very much aware of potential MD areas in the country and are taking legal actions regarding increasing the FD's availability within these areas. On the other hand, local authorities are facing on a day-to-day basis the consequences of MD but insufficient available funds are stopping them to develop the needed infrastructure and offer better living conditions at the levels requested by younger population.

Several country specific policy implications were identified:

1. Recruit more graduates to persuade a professional path in family doctor's field;
2. Increase the amount of financial incentives and non-monetary bonuses to FDs who decided to work in areas identified as Medical deserts, in rural and other underserved areas;
3. Build more bridges and better connect between sectors, fortify the cooperation dialogue and assure the capacity building processes of national and local authorities;
4. Identify and mitigate the factors that lead to poor planning of FDs numbers: entries to training programs versus overall graduates versus health system's short and long term needs.

Policy recommendations

For the Ministry of Health:

1. Health workforce must be evenly distributed and available at all levels within the country;
2. Increase the financial incentives for Family Doctors that opt for professional activity in rural areas;
3. Create and implement the National Family Doctor's Registry that will allow up-to-date data on availability, geographical distribution, age brackets and other important information to be used for evidence based decisions.

For local authorities:

1. Assure more in-depth knowledge and capacity building in human resources in health management instruments and tools, including recruiting, retention and motivation instruments in order to allow local authorities to increase the rural health institutions' family doctors availability both short and long term.

For SUMF "Nicolae Testemițanu":

1. Increase the overall numbers and the capacities of licensed nurses with higher education degree. This will serve as an alternative to family doctors in rural and underserved areas and/or will make the available FD's practice more attractive to young professionals.

Annexes

Annex 1 Media analysis

Search criteria and keywords used: deșert medical, Republica Moldova, insuficiență de medici, lipsa cadrelor medicale în Moldova, lipsa medici de familie în mediul rural, satele Moldovei fără lucrători medicali.

List of internet resources identified:

<https://mamaplus.md/stiri/mai-multi-medici-din-republica-moldova-vor-sa-demisioneze>

<https://moldova.europalibera.org/a/situatia-medicalor-in-moldova/28680108.html>

<http://www.politiciidesanatate.ro/medicina-de-familie-din-republica-moldova-in-pragul-celor-doua-jubilee/>

<https://moldova.europalibera.org/a/30635540.html>

<https://tvrmdova.md/social/lipsa-personalului-medical-este-tot-mai-simtita-in-spitalele-din-republica-moldova/>

<https://www.jurnaltv.md/news/8d2b113ff4882973/suportam-o-lipsa-a-medicalor.html>

<https://sanatateinfo.md/News/Item/3999>

<https://diasporaconnect.md/news/avem-studii-universitare-foarte-bune-dar-ne-pleaca-medicii-unde-e-problema>

<https://sanatateinfo.md/News/Item/9729>

<http://pas.md/ru/PAS/News/Details/151>

<https://moldova.europalibera.org/a/deficit-de-medici-de-familie-la-sate/29261547.html>

<https://www.aparatorul.md/lipsa-de-specialisti-in-medicina-e-critica-citi-medici-de-familie-au-mai-ramas-in-moldova/>

<https://www.moldova.org/opt-sate-si-un-medic/>

https://www.canal3.md/ro/sate-intregi-din-moldova-fara-medici_67728.html

[https://timpul.md/articol/\(situatie-critica\)-satele-din-moldova-fara-medici-de-familie-41316.html](https://timpul.md/articol/(situatie-critica)-satele-din-moldova-fara-medici-de-familie-41316.html)

<https://tv8.md/2021/04/16/video-realitatea-trista-a-sistemului-medical-din-sate-putini-doctori-si-conditii-de-munca-deplorabile>

Annex 2 In-depth interview guide

The in-depth interview was performed using 9 main questions in order to discover the stakeholders' knowledge, understanding and mitigating tools used in the case of a medical desert.

First of all the researchers asked what is the definition of a MD or what in their opinion a MD is. Further on, the questions were the following:

1. Are you aware of an area considered as a MD? Please provide an example. Why do you think this area is a MD?
2. Name at least 3-4 factors that can serve as an indicator for identifying a MD. Do you think distance, the number of FD, the time spent on road, the availability of a health service can be considered as an MD indicator?
3. In your opinion, what is the acceptable distance for a patient to access a health service? Is it 5, 10, 15 km or more? What about the number of health professionals required in an area to grant universal health coverage in this area?
4. In an MD is identified, do you consider to be necessary a comparison with other regions or with some national standards?
5. In your opinion, what are the main factors that lead to medical deserts? Do you think of geography, structure of the health service, structure of the population, political factors, migration, natural disasters, humanitarian crisis or others?
6. How to prevent or reverse a MD?
7. People from your area consider to have limited access to health services? Why do they think so? Do you have any specific cases in mind?
8. What are the institutions that can help mitigate MD? Are they at central level or at local level? Do you think of a specific person? Does the health institution that you represent have the necessary tools to mitigate MD?
9. What are the indicators that can lead to a better access to health services? What are the concrete steps that were performed or policies implemented by your institution in order to offer better access to health services?



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