

PREVENTION SAVES LIVES AND REDUCES HEALTH SPENDING

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Abstract: *Maintaining a health system, at the highest level of performance and ensuring the health needs for the population, is a major challenge for all states. Health expenditures are constantly increasing, being influenced by technological progress in the field, innovative treatments or aging of the population in correlation with the existence of chronic diseases related to age. An important component in reducing health expenditure is prevention, medical conditions can be detected in the early stage, and their treatment requiring significantly lower costs compared to aggravated forms of the disease. For the period 2014 - 2018, Romania has allocated, on average, over 68% fewer financial allocations for prevention (out of GDP), compared to the European Union average, while countries such as Italy, Finland, Sweden, Germany and the Netherlands have allocations between 27 and 36% above the European average. Romania ranks, at European Union level, on the penultimate position, allocating 0.08% of GDP (2018) for prevention in health, with a direct impact on the number of critical patients and high treatment costs.*

Key words: prevention in health; health spending; cost reduction through prevention

JEL classification: A12; H51; i15; i18; P43

1. Introduction

Prevention in health means complex and combined actions, with the main aim of reducing avoidable diseases, which cannot be achieved only through simple information campaigns, it being necessary to carry out dedicated screening and medical education actions at the population level.

At the level of the European Union, a majority of the recorded deaths are caused by three main diseases that include the circulatory, respiratory system and neoplasms, for 2018, representing a rate of 26,039 deaths per 100,000 inhabitants out of the total of over 35,000 deaths recorded. (Eurostat, 2022).

Through this research I want to show the importance of prevention in health from at least two extremely important aspects: saving lives and ensuring years of quality life, as well as the impact on health expenses.

This study was carried out by analyzing open databases, from the European Union level, as well as public reports regarding the national health programs carried out in Romania, a comparison being made that shows the low level of importance shown to prevention.

2. Literature review

Even though Benjamin Franklin's words: "*An ounce of prevention is worth a pound of cure*" (Labaree, 1961), referred to fire prevention, are perfectly applicable in any field, including that of health. Prevention in health means, in addition to maintaining proper health and lowering the mortality rate, a significant reduction in health spending.

Various authors have conducted research on reducing costs in health through actions to eliminate fatal diseases (Bonneux L, 1998), reducing the demand for medical services (Fries, 1993), trying to answer whether prevention saves lives or just reduces costs (Grootjans-van Kampen I, 2014). The European Commission is trying to promote prevention strategies to improve health (Sauer, 2010), in 1993 a multiannual public health programme was established by publishing eight areas of action on health prevention and monitoring. (Bsoul-Kopowska, 2019).

3. Analysis of prevention spending in the European Union

By analysing the data (Eurostat, 2022), it is found that the average percentage of GDP expenditure allocated for health prevention for the period 2014-2018 is 0.21%, with countries such as Italy, Germany, Finland, Sweden and the Netherlands allocating above the EU average, with percentages (on average) between 0.36 and 0.38% of GDP.

At the opposite pole are Luxembourg, Malta, Greece, Cyprus, Romania, and Slovakia, which allocated percentages between 0.08 and 0.11% of GDP for health prevention in the same period.

For 2018, Romania ranks on the penultimate position, among 26 Member States of the European Union, with a budget allocation of only 0.08% of GDP, ahead of Slovakia (0.05%).

Table 1: Situation regarding prevention spending in the EU, percentage of GDP

Country	2014	2015	2016	2017	2018
Italy	0,38	0,37	0,37	0,38	0,41
Germany	0,36	0,36	0,36	0,36	0,37
Finland	0,32	0,37	0,37	0,36	0,37
Sweden	0,33	0,34	0,34	0,35	0,37
Netherlands	0,40	0,36	0,36	0,34	0,32
Slovenia	0,26	0,24	0,25	0,25	0,26
Estonia	0,19	0,20	0,21	0,22	0,24
Denmark	0,22	0,23	0,24	0,24	0,23
Czechia	0,24	0,20	0,21	0,22	0,22
Austria	0,22	0,23	0,22	0,22	0,22
Bulgaria	0,22	0,21	0,21	0,21	0,21
France	0,22	0,21	0,21	0,21	0,21
Croatia	0,19	0,20	0,21	0,21	0,21
Iceland	0,20	0,19	0,20	0,20	0,21
Hungary	0,19	0,19	0,22	0,20	0,20

Spain	0,19	0,19	0,19	0,19	0,19
Ireland	0,26	0,20	0,20	0,19	0,18
Belgium	0,19	0,18	0,16	0,16	0,17
Portugal	0,17	0,17	0,17	0,17	0,17
Latvia	0,11	0,11	0,15	0,14	0,16
Lithuania	0,11	0,13	0,14	0,14	0,15
Poland	0,17	0,17	0,20	0,16	0,14
Luxembourg	0,11	0,11	0,11	0,11	0,11
Malta	0,15	0,12	0,11	0,11	0,11
Greece	0,12	0,11	0,11	0,10	0,10
Cyprus	0,04	0,09	0,09	0,09	0,09
Romania	0,09	0,10	0,08	0,09	0,08
Slovakia	0,13	0,14	0,08	0,07	0,05

Source: Eurostat, <https://ec.europa.eu/eurostat/databrowser/bookmark/db92632b-795b-41dd-a6ac-f450c286ce7a?lang=en>

4. Screening, a basic component in prevention

Screening is the most important activity in health prevention, allowing the early detection of cases of disease, diseases detected in the early stage having a high chance of becoming treatable. The costs of treating the conditions detected at an early stage are significantly lower than those detected in an advanced phase where advanced medical procedures or specific state-of-the-art treatments are often required.

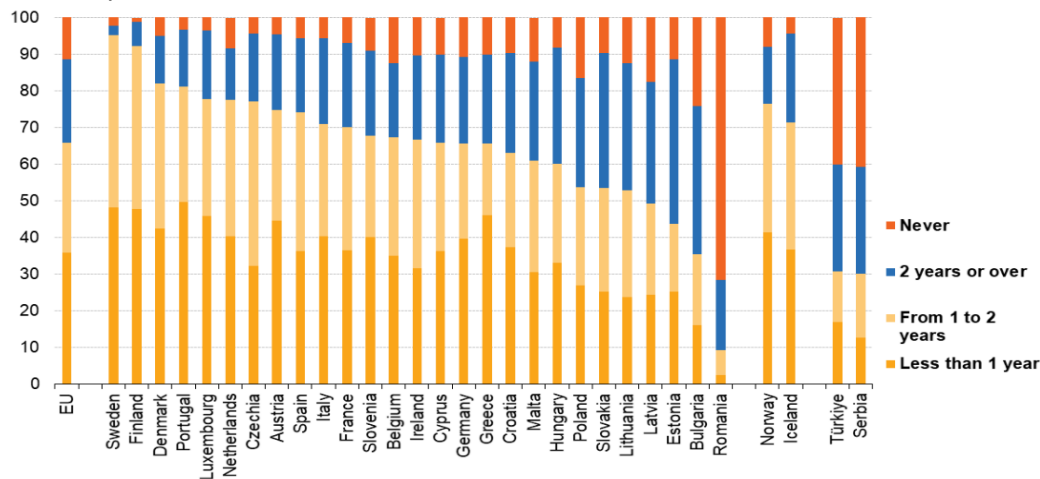


Figure 1: Self-reported screening – proportion of women aged 50 to 69 years having had an X-ray breast examination, 2019 (%)

Source: Eurostat (hlth_ehis_pa7e)

At European Union level, a series of screening programs are being implemented for breast cancer, cervical cancer, colorectal cancer, influenza vaccination or cardiovascular disease screening. Some countries have realized the high

importance of these programs and have made efforts in their development, so that as many citizens as possible benefit from these services, with a direct impact on the health status at the level of the population, reducing the pressure on the medical system and implicitly the funds allocated to the treatment of diseases. For Romania, compared to other Member States of the European Union, screening represents another failed objective in the field of health, which is confirmed by the statistical data provided by Eurostat.

Countries such as Sweden, Finland, Denmark, Portugal, Luxembourg, the Czech Republic and Austria have, in 2019, less than 5% of women between 50 and 69 years of age who have never taken a breast X-ray.

Romania is at the bottom of the ranking with a worrying percentage, respectively 71.6% of women in this age segment have never performed a breast X-ray.

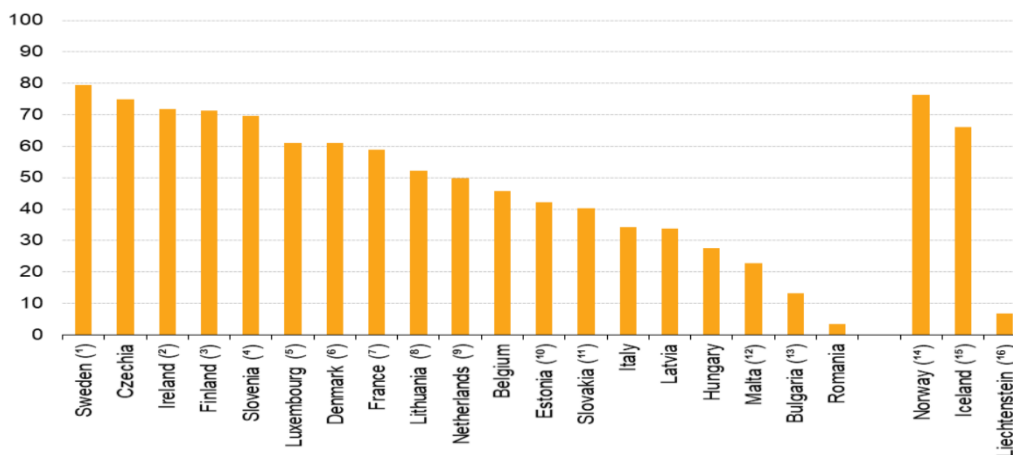


Figure 2: Cervical cancer screening rate, women aged 20-69 years, 2020 (%)
Source: Eurostat (hlth_ps_scre)

In Sweden, the Czech Republic, Ireland and Finland, women aged between 20 and 69 years performed more than 70% cervical cancer screening in 2020. In this chapter, too, Romania occupies the last place with a percentage of only 3.4%, given that the highest incidences in the European Union are recorded, being diagnosed 3,380 new cases and 1,805 deaths (in 2020) caused by this disease. (Bruni L, 2021)

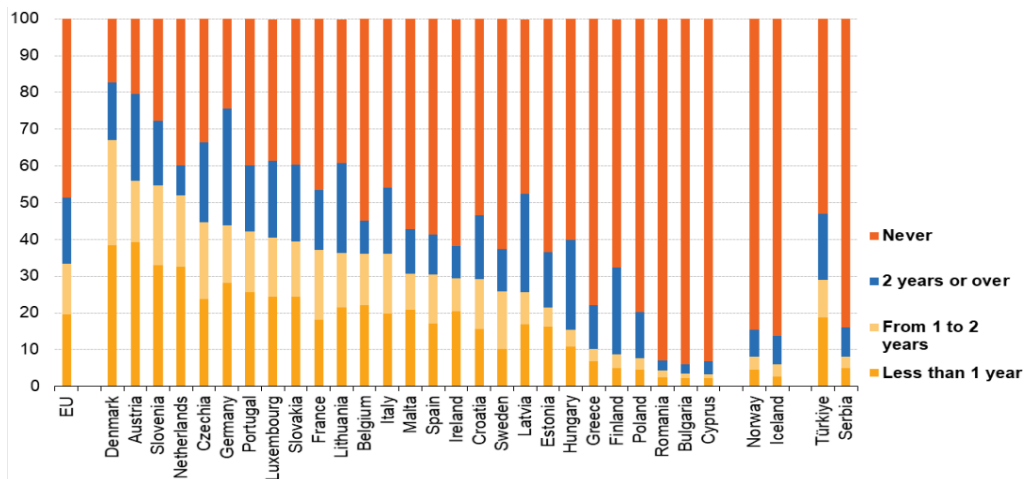


Figure 3: Colorectal cancer screening rate, people aged 50-74 years, 2019 (%)
Source: Eurostat (hlth_ehis_pa5e)

Over 90% of the population aged 50-74 years, in Romania, Bulgaria and Cyprus, have never performed a screening for colorectal cancer, at a great distance from countries such as Denmark, Austria, Slovenia or Germany (between 17.4% - 24.5%).

In terms of vaccination against influenza, Romania ranks almost half of the European Union average, in the population segment over 65 years, with a percentage of 35% (in 2019) and half compared to Denmark, Greece or the Netherlands.

Vaccination is the most effective form of protection against diseases, the cost of vaccination being extremely low in relation to the expenses required to treat the conditions. Through vaccination, over time, a number of diseases that could be fatal were eradicated or provided the necessary immunization so that the conditions did not become serious.

Table 2: Comparative situation regarding vaccination and hospitalisation costs

Vaccination Cost	Hospitalization Cost	COVID-19 Treatment Cost
Anti HPV – 157 €	Oncology – 363 €/day	ATI – 900 €/day
Influenza – 6 €	Infectious – 119 €/day	Infectious – 360 €/day
Anti COVID-19 - €	Cardiology – 117 €/day	

Source: Author processing based on costs in hospital units

The costs of vaccination against HPV, against cervical cancer are almost half compared to a single day of hospitalization in an oncological ward. The costs of only the drug treatment of patients with oncological conditions amount to €2,400/year per patient (CNAS, 2022), not including the rest of the expenses for hospitalization, surgery or out-of-pocket payments made by patients.

Vaccination against COVID-19 is one of the most cost-effective health protection solutions, the risk of an extremely unfavorable evolution of this infection being very high, and the expenses necessary for the treatment can exceed up to 47 times the cost of vaccination.

5. Analysis of the main causes of death in the European Union

Following the analysis of the data provided by (Eurostat, 2022), for 26 Member States of the European Union, in 2018, 75.87% of the causes of death were caused by three major groups of diseases, namely diseases of the circulatory, respiratory and neoplasm systems. Of the total number of deaths recorded in 2018, 43.09% of deaths are caused by diseases of the circulatory system, 25.11% by neoplasms and 7.67% by respiratory diseases.

Romania recorded, in 2018, the penultimate position, with a total rate of 1,474 deaths reported per 100,000 inhabitants, 59.26% of which were caused by diseases of the circulatory system, 18.65% by neoplasms and 6.42% by diseases of the respiratory system.

The average rate at European Union level of deaths reported per 100,000 inhabitants is 810 cases, Romania registering a rate with over 660 cases / 100,000 inhabitants in addition to this average.

Table 3: Situation of the main causes of death in the EU, 2018, rate per 100,000 inhabitants

Country	Diseases of the circulatory system	Cancer	Diseases of the respiratory system
Spain	227,7	229,96	101,04
Luxembourg	262,3	237,24	85,31
Finland	329,33	218,71	38,41
Belgium	237,33	243,62	111,66
Italy	281,04	247,18	66,00
Sweden	296,3	230,91	68,16
Cyprus	292,68	212,28	91,88
Netherlands	246,52	281,76	90,62
Denmark	235,66	287,02	127,64
Malta	311,22	240,07	100,16
Portugal	286,87	248,48	116,58
Ireland	277,91	269,5	125,41
Greece	337,69	246,2	94,73
Austria	376,95	242,5	64,01
Germany	373,57	254,73	76,84
Slovenia	403,38	312,16	53,93
Czechia	556,76	278,03	89,6
Poland	526,11	314,87	84,85

Estonia	605,73	300,8	48,52
Slovakia	597,08	313,33	86,96
Croatia	609,43	330,61	59,11
Lithuania	782,16	278,78	48,14
Latvia	818,15	300,86	46,59
Hungary	738,71	342,86	87,83
Romania	873,5	274,85	94,59
Bulgaria	1.075,92	233,81	70,84

Source: Author processing from Eurostat database, [hlth_cd_asdr2]

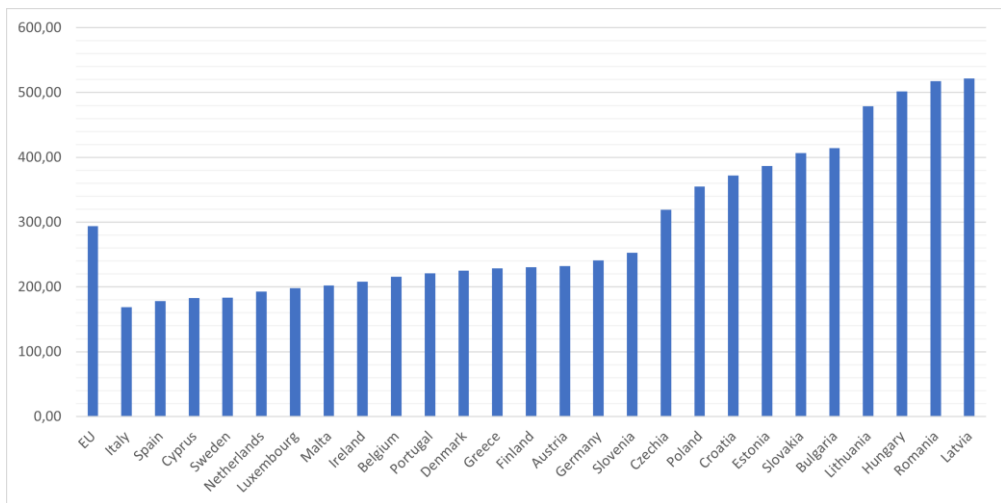


Figure 4: Avoidable deaths, reported per 100,000 inhabitants, 2018 Source: Eurostat,

https://ec.europa.eu/eurostat/databrowser/view/hlth_cd_apr/default/table?lang=en

The European average for avoidable deaths in 2018 is 293.61 cases per 100,000 inhabitants, and ten countries exceed this average. Romania is on the penultimate position registering almost double the European average, respectively 517.47 cases per 100,000 inhabitants.

Among the avoidable deaths are those caused by alcohol consumption, another chapter in which Romania ranks among the first positions in the European Union statistics and for which there are no national prevention programs.

6. Conclusions

Health expenditure in Romania is among the lowest in the European Union, with a direct impact in terms of mortality rates from preventable causes, both in terms of disease prevention and treatable cases.

High mortality rates on treatable causes show us that the Romanian health system fails to provide the population with the necessary and timely treatments to avoid deaths.

The present paper carries out an empirical research on the existence of a correlation, at the level of the 26 EU Member States analyzed, between the funds allocated for prevention, respectively the promotion of health, and the mortality rates caused by the three major groups of diseases, diseases of the circulatory, respiratory and neoplasm systems, with direct implications in reducing health expenditure.

Given the complexity of the factors influencing changes in people's lifestyles, the mere allocation of financial resources for prevention in health does not guarantee noticeable results in avoiding unwanted deaths. Dedicated and intense actions are needed in order to educate the population about adopting a healthy lifestyle with a direct impact on the state of health.

In order to establish the impact of prevention on the causes of death, in-depth analyses are also required on other causes that can cause the population to become ill, namely smoking (8 million people die annually from smoking (WHO, Fact sheets - Tobacco, 2022)), pollution, unhealthy diet or alcohol consumption (3 million people die annually due to alcohol consumption (WHO, Fact sheets - Alcohol, 2022)).

Most of the time, in Romania, prevention is reduced to press campaigns, the transmission of communications or the distribution of printed materials, some campaigns failing due to the lack of a communication strategy (see the anti-HPV campaign), with a direct impact on the health of the population.

Even though statistics at European Union level show worrying trends in preventable deaths and life expectancy, Romania fails to implement and effectively run dedicated prevention programs.

Although in recent years the screening activities in Romania register certain increases, compared to other Member States of the European Union, they are in an insignificant percentage, the detection of diseases in its early stage being reduced, which has a substantial impact on the allocated funds necessary to treat critical cases.

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