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The European House Ambrosetti

Vaccines Europe

IFPMA

THE VALUE OF PREVENTION FOR ECONOMIC GROWTH AND THE SUSTAINABILITY OF HEALTHCARE, SOCIAL CARE AND WELFARE SYSTEMS

September 2024

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Over the last decade, the EU economy has experienced slow growth, and it is not expected to grow substantially in the coming years. Additionally, the ongoing demographic and epidemiological transition is increasing pressure on public finances, particularly healthcare and social expenditure. The current permacrisis—encompassing geopolitical and climate-related challenges—exacerbates these issues and directly threatens fiscal sustainability through slower economic growth, increased Government deficits, and consequently, higher public debt levels. Addressing these intertwined challenges is essential to ensure the long-term sustainability of healthcare, social care, and welfare systems across the EU.

In this context, there is a need to share a new paradigm that shifts the healthcare model from a reactive (treating sickness) to a proactive system (promoting health), leveraging investments in health prevention. At this critical juncture, the EU has introduced the New Economic Governance Framework (NEGF), which provides an opportunity to consider investments in the healthcare sector—especially in prevention—as "social security investments," similar to what has been done for investments in defence and the digital and green transitions. Given this new framework, including healthcare investments within the scope of the NEGF would not only allow for greater flexibility in an unstable economic scenario but also lead to increased spending in areas with positive effects on the health and well-being of the population.

There is already extensive literature discussing the potential advantages of preventive healthcare (promotion of healthy lifestyles, screening programs, and particularly, immunisation strategies). Preventive healthcare not only translates into increased life expectancy and improved quality of life but also yields economic advantages, such as savings in healthcare spending and increased worker productivity, thereby supporting the country's economic and social growth and resilience. Moreover, the containment of public spending frees up resources that could be dedicated to improving the quality of services provided, R&D for treatments of currently untreatable diseases, and investments in sectors like education or employment.

Studies suggest that every 1 euro spent on preventive healthcare generates a 14-euro return to the health and social care economy[1]. Regarding immunisation, a recent report has shown that adult immunisation returns 19 times its initial investment to the society and economy, and up to 33 times in the case of pneumococcal immunisation[2].

However, today, only a small percentage of national healthcare budgets is spent on prevention, and even less on immunisation (0.5%).

As these studies show, by focusing on prevention, European countries can mitigate the future burden on their healthcare and welfare systems and promote long-term economic and social resilience. As EU Member States prepare to submit their National Medium-Term Fiscal-Structural Plans to the European Commission by September 20th, 2024, there is a critical window of opportunity to prioritise investments in health prevention. In the future, spending on preventive healthcare can be considered an "investment," as it entails potentially higher growth and reduces future expenditure:

— In the short term, it is necessary for investments in prevention to be recognised as beneficial for long-term fiscal sustainability and granted greater flexibility within the Member States' fiscal-structural plans.

— In the medium/long term, new revised fiscal rules should exclude prevention and immunisation investments from the calculations of Member States' deficit or debt levels when assessing compliance with fiscal rules.

It is imperative to recognise that the current permacrisis needs to be addressed and overcome with concrete solutions. In this context, embedding preventive healthcare – and in particular immunisation – into EU Member States' fiscal strategies is paramount to promote the economic sustainability of healthcare, social care, and welfare systems, enabling them to adapt and flourish amidst the challenging and unpredictable conditions Europe is facing. Member States must seize this moment to advocate for and implement these changes within their fiscal plans, while EU institutions should endorse this approach when evaluating these plans.

[1] Masters, R., Anwar, E., Collins, B., Cookson, R., & Capewell, S. (2017). "Return on investment of public health interventions: a systematic review". Journal of Epidemiology and Community Health.
[2] Steuten, H. E. B., Chowdhury, S., Neri, M., Radu, P., Besley, S., Bell, E., & Brassel, S. (2024). "Socio-Economic Value of Adult Immunisation Programmes". Office of Health Economics.

PREMISE

In the current economic, demographic, epidemiologic, and political scenario, investments in prevention have become indispensable for the EU. The ageing population across the continent necessitates ever-greater health spending. At the same time, a shrinking workforce due to demographic changes results in decreased tax revenues, leaving fewer resources available for healthcare, social care, and welfare expenditure. This financial strain is further compounded by the European Union's slow economic growth, which limits the overall fiscal capacity.

Moreover, both infectious and non-communicable diseases represent an increasing cost for national healthcare systems due to a complex set of factors, including an ageing population and climate change. These challenges place additional burdens on already stretched healthcare systems, making it clear that reactive measures alone will be insufficient.

At this critical juncture, the European Union has introduced a New Economic Governance Framework that offers greater flexibility in Government budgets. This model prioritises spending on key areas such as the green and digital transition, defence, and economic and social resilience, which includes health. This policy environment creates a unique opportunity for EU Member States to reframe their approach to healthcare financing by prioritising prevention.

Investing in prevention is a sustainable solution to address these multifaceted challenges. Preventive measures can improve health outcomes (also by reducing comorbidities), enhance productivity, and generate significant savings on healthcare, social care, and welfare costs. By focusing on prevention, EU countries can mitigate the future burden on their healthcare and welfare systems and promote long-term economic and social resilience. This paper aims to underscore the necessity of viewing health prevention as an investment and to highlight the strategic importance of proactive health measures in ensuring a healthier and economically resilient future.

This document would not have been possible through the collaboration with experts in the field of health prevention (public health experts, economists, etc.). The European House - Ambrosetti acknowledges the time and expertise provided and would like to thank them for providing valuable insights, contributions and experiences to the elaboration of this Report, in particular to the Advisors Prof. Walter Ricciardi (Chair, Mission Board on Vaccination in Europe; President of Mission Board for Cancer of European Commission; Full Professor of Hygiene at the Faculty of Medicine, Università Cattolica del Sacro Cuore) and Prof. Massimo Bordignon (Full Professor of Public Economics, Catholic University of Milan; Member; European Fiscal Board).

Europe is facing **substantial challenges** in continuing to deliver high-quality healthcare services to its citizens.

Ageing populations, epidemiological transitions, cost-of-living-crisis, geopolitical conflicts, acceleration in scientific research and technological innovation, a scarcity of healthcare personnel, rising health inequalities and health complexities stemming from climate change are threatening the **sustainability of healthcare services**, and adversely affecting citizens' health and productivity.

To ensure citizens' future health and well-being, Europe will need to **chart a new, cost-effective and sustainable approach to healthcare with prevention at its core**

THE MAIN CHALLENGES FOR HEALTHCARE SYSTEMS IN EUROPE

Europe's Permacrisis: Health and Healthcare implications

In the last years, Europe has been going through a period of concurrent crisis factors – both short-term and long-term – that are undermining the health and wellbeing of the population: pandemic, geopolitical conflicts, social tensions and the cost-of-living crisis, have affected the daily lives of millions of EU citizens, with particularly pronounced effects on the most vulnerable.

The climate crisis, for example, has far-reaching health implications, with every additional 1°C of daily minimum temperature above 23.9°C increasing the risk of infant mortality by up to 22.4%. At the same time, slow economic growth in Europe compounds this issue by limiting the resources available to Governments to invest in their healthcare and welfare systems.

Figure 1. The European permacrisis – *Source: TEHA on various data, 2024*

The cost-of-living crisis adds another layer of complexity. As inflation rises and wages stagnate, also because of low economic growth, many citizens find it increasingly difficult to afford basic necessities, including healthcare. Today, the incidence of impoverishing health spending reaches 12% of households in some EU countries.

The war in Ukraine and the Israeli-Palestinian conflict also created significant instability, impacting international relations in an already fragile geopolitical framework.

Another important aspect of public health that has been severely impacted by the current situation is related to mental health. According to a recent poll, the permacrisis has affected the mental health of 62% of the European population[3].

Throughout history, crises have consistently been a part of the human experience. What distinguishes the current socioeconomic, environmental, and political scenario is the simultaneity of these crises and the strength of their interconnections. This intricate web of interconnected crises is often referred to as a "permacrisis".

The European Union's population is ageing rapidly

The European Union is experiencing a demographic transition characterised by an increasingly ageing population structure. Low fertility rates, which have remained stable at approximately 1.5 children per woman, and higher life expectancy, averaging 81.5 years in 2023, are key contributors to the transformation of the EU's population pyramid. Currently, Europe is the oldest continent globally, with a median age more than twice that of Africa.

The ageing of the population is projected to accelerate in the coming decades. The median age in Europe is anticipated to reach 49.5 years by 2050 (48.2 in the EU), up from 45.4 in 2024. At present, the median age is decreasing in only two EU Member States: Sweden and Malta.

Projections indicate that by 2050, 10.9% of the EU population will be over 80 years old, an increase from 6.1% in 2024. Additionally, nearly one out of three individuals (29%) will be in the 65+ age group, with this proportion reaching as high as 35.5% in Greece.

The most rapid phase of population ageing is expected to occur between 2024 and 2035. However, this demographic trend is projected to persist well into the latter half of the 21st century.

[3] Flash Eurobarometer 530 (October 2023), "Mental health" Report.

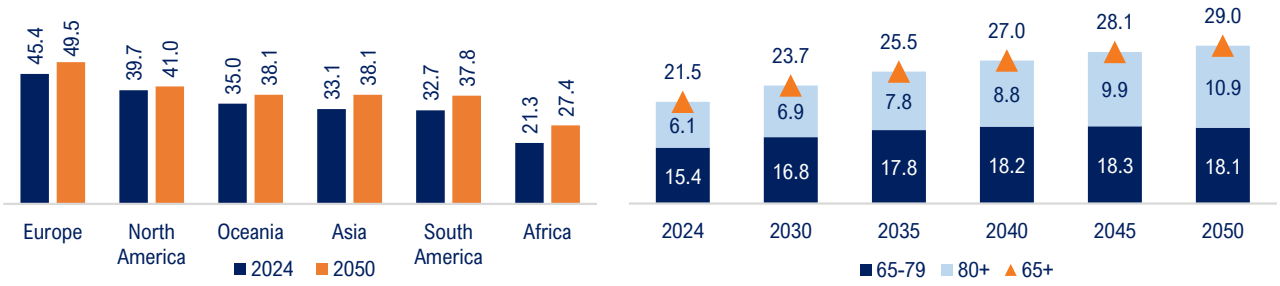


Figure 2. On the left: Median age of the population by continent (in years), 2024 – 2050. On the right: EU population by age group (% of the total population), 2024 – 2050 – *Source: TEHA on Eurostat data, 2024*

The ageing of the population is not homogeneous throughout the European Union. In 2024, Southern European countries are the oldest, including Italy (24.3% of the total population is aged over 65 years), Portugal (24.3%), and Greece (23.3%). Moreover, these disparities are projected to widen over time. By 2050, the four countries with the highest proportion of individuals over 65 years will be in Southern Europe, specifically Greece, Portugal, Italy, and Spain.

The ageing population is associated with an increase in chronic diseases, which are more prevalent among the elderly. In 2022, 36.1% of the general population in the EU was affected by a chronic disease, whereas this percentage rises to 61.4% among the over-65 population.

Notably, there is significant variability among EU Member States, with the prevalence of chronic diseases ranging from 38.0% in Luxembourg to 86.3% in Cyprus.

The ageing of the population is driven mainly by an increase in the number of unhealthy life years, which have been 18.0 years in 2022 compared to 17.0 years in 2017. On the other side, healthy life years have fallen from 63.9 to 62.6 years throughout the same time span.

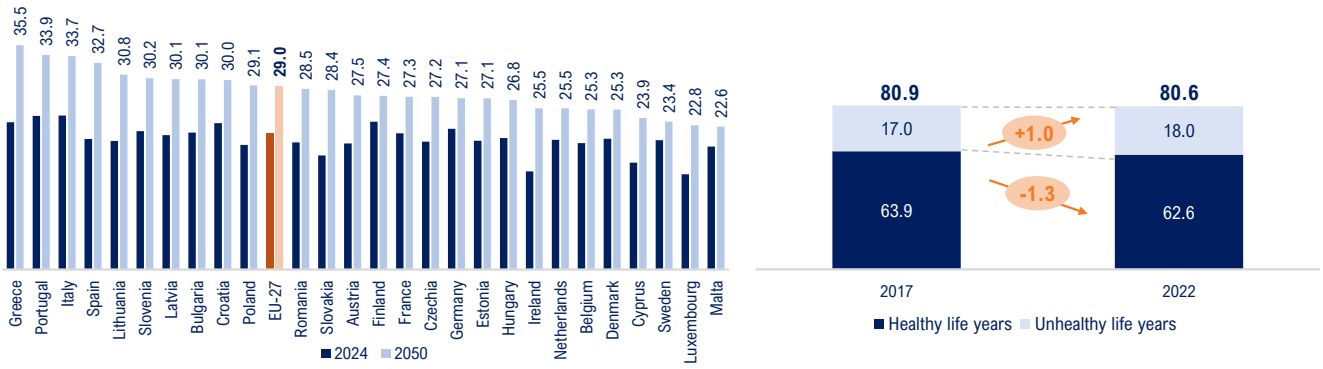


Figure 3. On the left: Population ages 65 and above (% of the total population), 2024 and 2050. On the right: Life expectancy by healthy and unhealthy life years in the EU (years), 2017 and 2022 – *Source: TEHA on Eurostat and OECD data, 2024*

The ageing population leads to growing healthcare and welfare systems' costs

The ageing of the population also has important impacts on national healthcare and welfare systems, both in terms of financing and in terms of demand for healthcare services:

— On the one hand, the gradual decrease in the working-age population, with the same employment rate, will lead to a gradual reduction in the tax revenues needed to finance it;

— On the other hand, the increase in the elderly population will lead to a growing demand for health and social care, putting further pressure on healthcare systems that already today struggle to guarantee access to services for the entire population. Healthcare expenditure per capita in the over-65 population is above five times as high as in the population below 65 years.

In this sense, the increase of the old age dependency ratio represents a threat to EU's healthcare systems fiscal sustainability. In 2024, the old age dependency ratio in the EU is 36.9%, and by 2050 it is expected to reach 55.0%. By 2050, inequalities in the old age dependency ratios across EU countries will have increased dramatically, with a larger increase in Southern Europe.

As EU's population continues to age, Governments will face increasing cost pressures in the face of declining tax revenue. According to the OECD[4], the changing population structure is gradually eroding Government revenues. Across EU countries, this decrease can be estimated in 0.17% of revenues per year at the central and 0.05% at the local level.

[4] OECD (2022), «Ageing and the Long-run Fiscal Sustainability of Health Care across Levels of Government" .

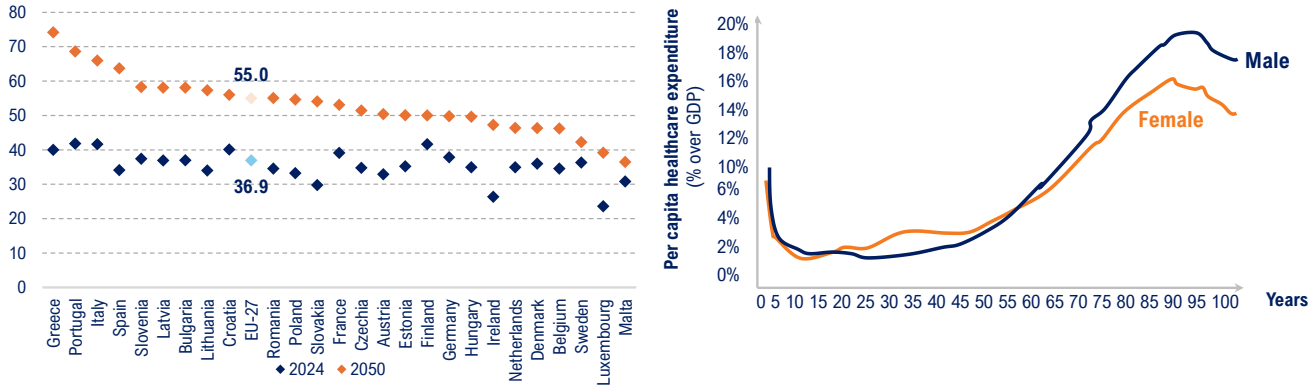


Figure 4. On the left: Increase of the old age dependency ratio (%), 2024-2050. On the right: Per capita healthcare expenditure by age-group in Europe (years and % over GDP) *– Source: TEHA on Eurostat and OECD data, 2024*

Risk factors such as alcohol, smoking, unhealthy diet and lack of physical activity are a challenge to the population's health

Public health in the European Union is significantly influenced by modifiable risk factors such as alcohol consumption, smoking, unhealthy diets, and lack of physical activity. These factors contribute to a substantial portion of the health burden, resulting in over 7,400 daily premature deaths across Europe.

According to the World Health Organization (WHO), tobacco, alcohol, ultra-processed foods, and fossil fuels are responsible for approximately 2.7 million deaths annually in Europe, accounting for 24.5% of all deaths. Tobacco alone is responsible for over 1 million deaths each year, constituting 10% of all deaths in the region. In 2022, 19.7% of the population have smoked on a daily basis.

Despite these alarming statistics, many EU countries have not implemented sufficient measures to mitigate these risks[5]. For instance, only a minority of European countries have enacted bans on smoking in public places. Efforts to reduce the attractiveness of harmful products through plain packaging, alcohol taxation, and food labelling have not been widely adopted. This lack of comprehensive regulation is particularly concerning given that nearly one in five adults (19%) reported heavy episodic drinking at least once a month in 2019, a rate that has remained stable since 2014.

The WHO also highlights that European countries are failing to meet the Sustainable Development Goals (SDGs) related to halting the rise in obesity and reducing smoking rates by 30% among individuals aged over 15. Moreover, dietary habits remain poor, with only 12% of adults consuming the recommended 5 portions of fruits and vegetables daily, while 33% consume less than one portion a day.

[5] Nikitara K et al. (2021), «Prevalence and correlates of physical inactivity in adults across 28 European countries".

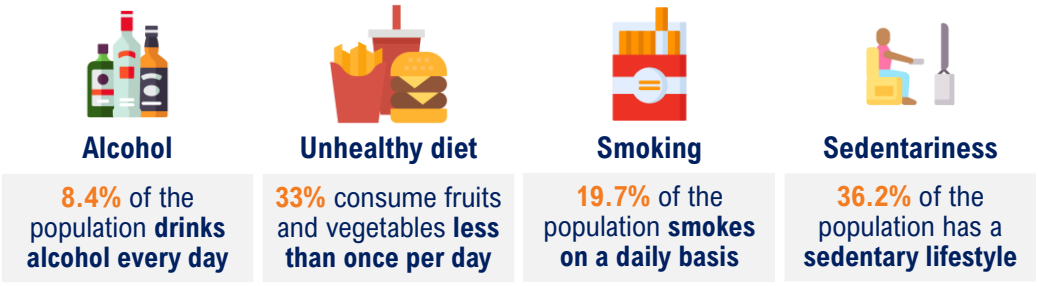


Figure 5. Main behavioural risk factors in the EU by prevalence
– Source: TEHA on Eurostat and OECD data, 2024

A worsening of the main risk factors for disease is increasing the burden on healthcare systems

Many diseases are significantly influenced by risk factors, which contribute both to their emergence and to the worsening of patient outcomes. For instance, 90.4% of Disability-adjusted Life-Years (DALYs) for HIV and AIDS and 40.9% for diabetes are attributable to behavioural risk factors such as poor diet, lack of physical activity, smoking, unsafe sex, and alcohol consumption, according to the Global Burden of Disease (GBD).

As these risk factors worsen or improve only marginally, the healthcare costs associated with these diseases will continue to rise. The slow pace of improvement in addressing these risk factors means that the prevalence and severity of these diseases remain high, leading to increased demand for medical care and treatment. This trend is gradually increasing the financial and economic burden on healthcare systems, making it imperative to adopt more effective prevention and intervention strategies to mitigate these risks and control healthcare costs.

While it is concerning that a substantial portion of the disease burden is due to risk factors, it also presents an opportunity. Since these factors are modifiable, promoting primary prevention can substantially reduce the burden of these diseases.

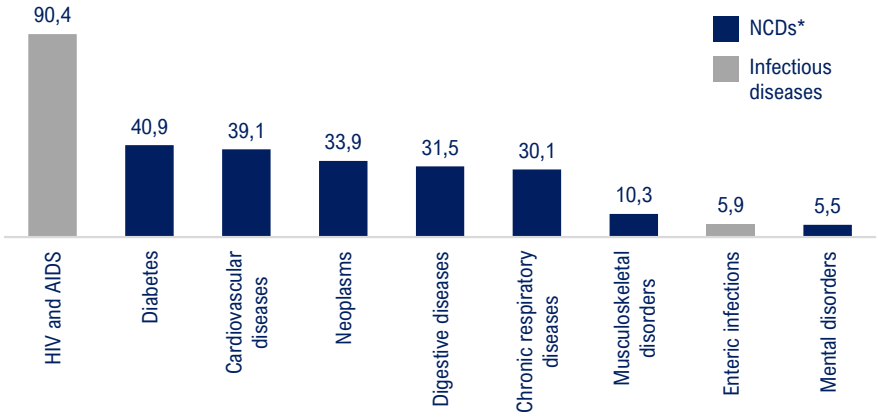


Figure 6. Share of disease burden in terms of DALYs attributable to behavioural risk factors in the EU (%), 2021 – *Source: TEHA on GBD data, 2024*

Health challenges: Infectious diseases

The global population growth and economic development have multiplied opportunities for contact with both human and natural reservoirs, promoting the emergence and transmission of infectious diseases.

The expansion and intensification of agriculture and livestock farming, for example, have disrupted existing biodiversity, exposing humans and animals to new forms of contact with pathogens. According to a recent study, changes in agricultural practices may have led to a 25% increase in all infectious diseases and a 50% increase in zoonotic diseases[6].

In developed countries, the ageing population, with a consequent rise in chronic illnesses and often compromised immune systems, can fuel the so-called spillover effect (or species jumping), increasing their susceptibility to infectious diseases, as the COVID-19 pandemic demonstrated. The incidence of most infectious diseases increases with age due to the natural weakening of the immune system, making older adults more susceptible to infections. Therefore, the current demographic transition is likely to amplify the burden of these pathologies. Climate change also raises the risk of pathogen emergence and spread. A review of empirical evidence on pathogen spread revealed that 218 (58%) of 375 infectious diseases were aggravated by rising temperatures[7].

Every year, Europe faces s “tripledemic” (flu, RSV and Covid-19) which significantly strains healthcare systems and results in substantial economic costs, in addition to death tolls and long-term disabilities. The recurring risk of such outbreaks underscores the importance of preparedness and prevention. Since 2023, vaccines have become available for all three diseases, providing a critical tool to mitigate these risks.

Figure 7. Drivers of increased transmission and diffusion of infectious diseases (illustrative) – *Source: elaboration by TEHA, 2024*

[6] Rohr JR et al. (2019), “Emerging human infectious diseases and the links to global food production”.
[7] Mora C et al. (2022), “Over half of known human pathogenic diseases can be aggravated by climate change”.

Thanks to the success of immunisation, the burden of infectious diseases has seen an important decrease over the last decades

The burden of infectious diseases today is relatively low compared to non-communicable diseases (NCDs), not because infectious diseases are inherently less dangerous, but due to the remarkable success of immunisation programs.

Vaccination has played a pivotal role in reducing the prevalence and mortality of numerous infectious diseases that once posed severe public health threats. The effectiveness of immunisation has been so profound that the devastating impact of diseases such as polio and smallpox in the past has largely been forgotten.

From 1980 to 2019, the global mortality rate due to infectious diseases per 100,000 population declined by 64.2%. In Europe, this decline was 59.2%. These impressive reductions are a direct result of widespread immunisation efforts, which have virtually eradicated or significantly controlled many infectious diseases.

While significant progress has been made in reducing the impact of viral pathogens through vaccination, the growing burden of non-communicable diseases, in addition to a rapidly ageing population, means that immunisation programmes should continue to be a central pillar of government's health protection efforts.

- Respiratory infectious diseases can have a significant impact on older adults or individuals with non-communicable diseases, such as diabetes, heart disease or chronic respiratory conditions. With 22% of the world's population expected to be over 60 by 2050 according to the WHO, ongoing focus on public health efforts via immunisation is critical.

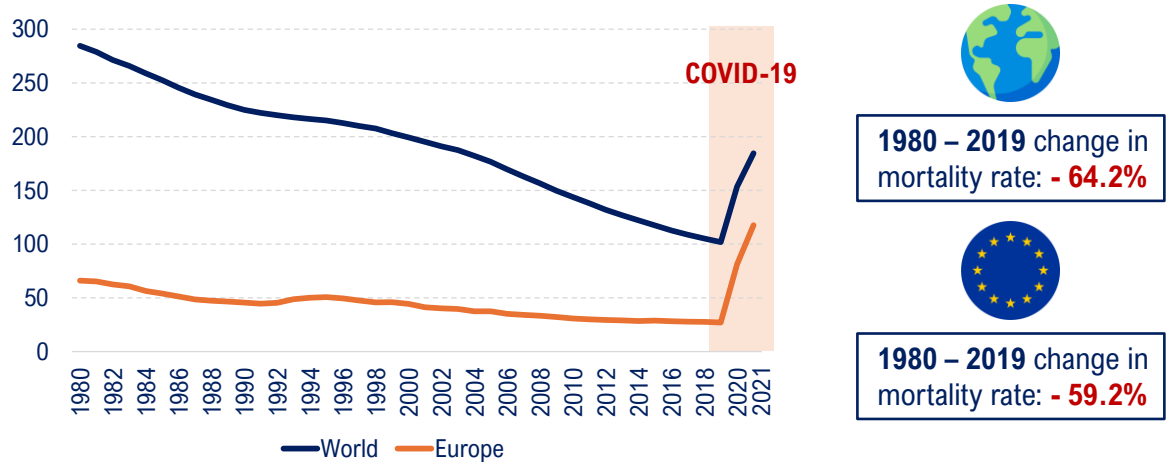


Figure 8. Deaths caused by infectious diseases (per 100,000 population), 1980 - 2021 *– Source: TEHA on GBD data, 2024*

- The reduction of respiratory infectious diseases through immunisation can reduce hospitalisations from the infection itself and reduce complications of underlying diseases. It is now estimated[8] that viruses are detected during half of all Chronic Obstructive Pulmonary Disease (COPD) exacerbations and are associated with poorer clinical outcomes, with human rhinovirus, respiratory syncytial virus and influenza representing the most commonly detected viruses during exacerbation. In addition, individuals with cardiovascular diseases are ten times more likely to have a heart attack after contracting influenza[9].
- In addition to the additional healthcare resource utilisation required managing the infection, further healthcare strain may be posed with older and sicker patients having more severe outcomes, requiring longer hospital stays.

In this context, the COVID-19 pandemic served as a stark reminder of the substantial impact infectious diseases can still have. In 2021, the mortality rate in Europe due to infectious diseases jumped back to twice as high as its 1980 levels, underscoring the potential severity of such diseases when they are not adequately controlled. This resurgence highlighted the ongoing necessity of immunisation, as the subsequent reduction in mortality was only achieved through extensive vaccination campaigns.

A recent WHO/Europe study[10] published in The Lancet Respiratory Medicine highlights that, between December 2020 and March 2023, COVID-19 vaccines played a crucial role in lowering pandemic-related deaths by at least 59%, saving more than 1.6 million lives in the WHO European Region. Without the vaccines, the current death toll of 2.2 million in the Region might have escalated to 4 million.

[8] Linden D et al. (2019), “Respiratory viral infection: a potential "missing link" in the pathogenesis of COPD”.
[9] Warren-Gash C. et al. (2018), “Laboratory-confirmed respiratory infections as triggers for acute myocardial infarction and stroke: a self-controlled case series analysis of national linked datasets from Scotland”
[10] Meslè MMI et al. (2024), “Estimated number of lives directly saved by COVID-19 vaccination programmes in the WHO European Region from December, 2020, to March, 2023: a retrospective surveillance study”.

Health challenges: Antimicrobial resistance (AMR)

The landscape of infectious diseases is further complicated by the rise of antimicrobial resistance (AMR), a silent pandemic causing over 1.3 million deaths globally and 35,000 deaths yearly in the EU[11]. Without adequate interventions, this number is projected to rise to 10 million by 2050.

In 2019, the WHO identified 10 threats to public health, of which 5 are infectious diseases such as HIV, Ebola and Dengue, and one is represented by AMR.

Although AMR is driven by natural selection and genetic mutation, inappropriate use of antibiotics in humans, animals, and plants, along with inadequate hygiene and infection control measures, can accelerate its development and spread. Pollution, climate change, and biodiversity loss, part of the "triple planetary crisis" as defined by the United Nations, also play increasingly significant roles in AMR development.

According to the latest OECD report[12], AMR-related deaths are predominantly among the elderly, with about two-thirds of these deaths occurring in people over 65 years old, while only 4% occur in those under 20, with very low percentages among infants and young children. This likely means that the impact of AMR in the EU will be magnified by the ongoing demographic transition. By 2050, the world economy could face a cost of up to USD 100 trillion[13].

Programs and interventions such as antimicrobial and diagnostic stewardship, incentives for the development of new antimicrobials, immunisation policies, and communication and training activities are among the 11 AMR countermeasures identified by the WHO.

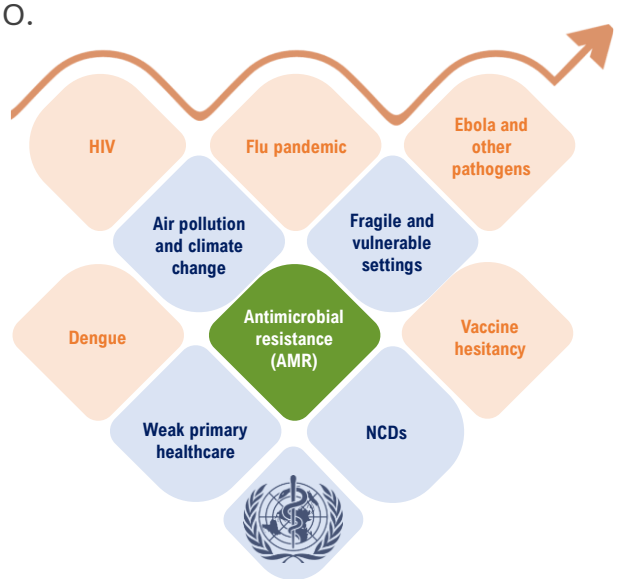


Figure 9. Threats to public health identified by the World Health Organisation, 2019 *– Source: TEHA on WHO data, 2024*

[11] European Commission, 2024.
[12] OECD (2023), "Embracing a One Health Framework to Fight Antimicrobial Resistance".
[13] European Commission, 2024.

Health challenges: Non-communicable diseases

Non-communicable diseases (NCDs) represent a significant challenge in Europe, both in terms of their impact on health and on the economy. The economic burden on EU healthcare systems is particularly important because of its ageing population. NCDs account for the largest share of EU countries' healthcare expenditures, costing EU economies over 700 billion euro per year. Furthermore, premature deaths due to four major NCDs (cardiovascular diseases, cancers, respiratory diseases and diabetes) cost EU economies 0.8% of GDP, with further losses incurred due to the lower productivity and employment rates of people living with chronic health problems.

The WHO, in its "World Health Statistics 2023" report, highlighted the growing health burden of NCDs. These diseases affect individuals across all social classes, ages, and genders and are responsible for 75% of deaths globally, with this figure is projected to rise to 86% by 2048. According to the latest data from the Global Burden of Disease, the four main groups of NCDs are responsible for 65.3% of all deaths in the EU.

Importantly, some NCDs such as cardiovascular diseases are often made worse by infectious diseases such as influenza or pneumococcal disease. Immunisation therefore plays a key role in reducing the burden of these diseases. For example, a recent cohort study[14] reported that people with a history of stroke were 35 times more likely to get a stroke after a Herpes Zoster infection. In addition, there is evidence of a bidirectional relationship between pneumonia and cardiovascular diseases[15]. Importantly, demographic variables are highly correlated with the prevalence of NCDs. In the EU, their prevalence ranges from 20.0% in the 25-34 years old age group up to 61.4% in the 65+ age group. For the 80+ population, the prevalence reaches 74.5%. The health and economic burden of NCDs will therefore increase in parallel with the ageing population. This will further strain healthcare and social care systems, increasing the demand for medical resources and care.

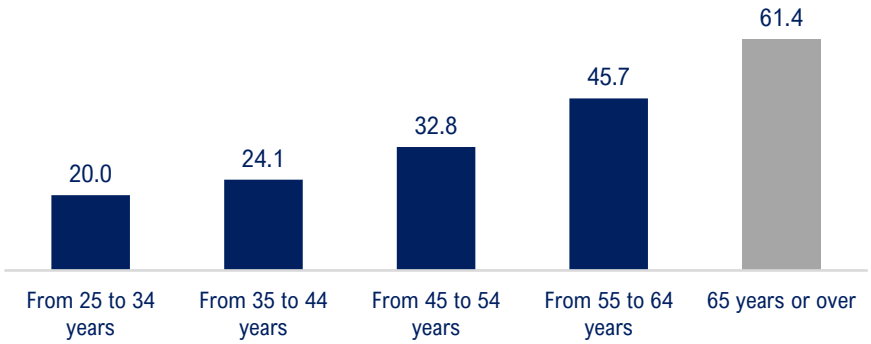


Figure 10. Prevalence of chronic diseases by age group (% of total population), 2022 *– Source: TEHA on Eurostat data, 2024*

[14] Ku HC et al. (2023), "Herpes zoster associated with stroke incidence in people living with human immunodeficiency virus: a nested case-control study".
[15] Rademacher J et al. (2024), "Association of respiratory infections and the impact of vaccinations on 1 cardiovascular diseases".

Healthcare workforce is key in addressing these challenges

The increasing demand for healthcare services necessitates a larger healthcare workforce. Currently, many EU countries face significant shortages of healthcare professionals, including doctors, nurses, and specialised medical staff, which adversely impacts patient care and health outcomes.

Additionally, healthcare professionals need to be trained in the use of the latest digital technologies, which can represent an opportunity to improve the efficiency, accessibility and quality of care - also by increasing the productivity of staff and healthcare facilities – if correctly integrated into the workflows. As early as 2021, in the wake of the pandemic, the European Commission warned Member States about the "persistent shortages and uneven geographic distribution of health workers in several European countries".

The shortage of nurses is particularly severe. According to the OECD, 12 of the 21 EU Member States for which data is available have fewer than 10 nurses per 10,000 inhabitants. Additionally, the number of nurses shows much greater variability across countries compared to physicians. On a positive note, the nurse-to-population ratio is now increasing in most EU Member States.

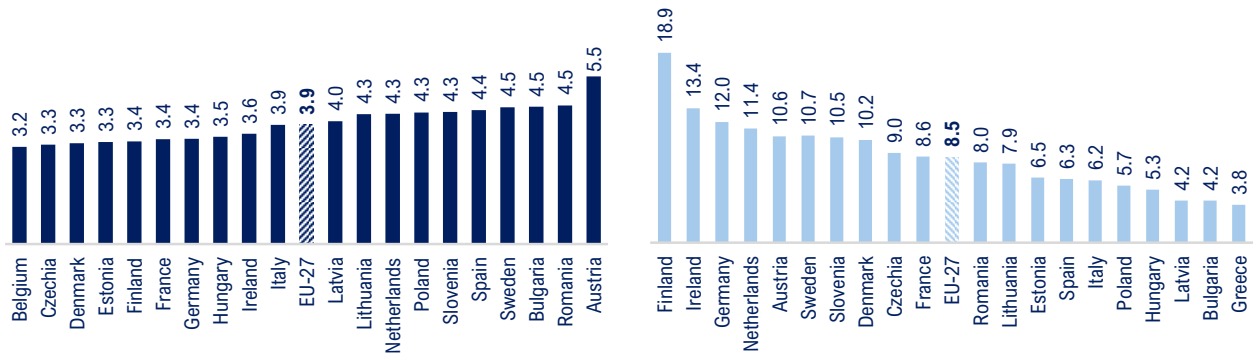


Figure 11. On the left: Number of practicing physicians (per 10,000 population), 2022 or latest available. On the right: Number of practising nurses (per 10,000 population), 2022 or latest available
- Source: TEHA on Eurostat data, 2024

The demographic transition is also causing problems for healthcare systems because of an ageing healthcare workforce. Currently, 40.4% of physicians in the EU is over 55 years old, as high as 53.5% in some Member States like Italy. This ageing workforce will impact the quality of care and lead to potential understaffing in the medium term at a time when demand for healthcare services is rapidly increasing. In addition, this will exacerbate the issue of availability of healthcare professionals in rural or remote areas.

This is also taking a toll on the wellbeing of healthcare professionals. According to WHO/Europe, approximately 40% of healthcare workers are dealing with depression and anxiety, and 70% report experiencing burnout[16].

While the difficult situation of the health workforce in Europe was already a reality before the pandemic, the COVID-19 crisis exposed and exacerbated the deep-rooted issues that healthcare systems are exposed to in terms of availability, effectiveness and wellbeing of their staff. High burnout rates, low pay, and often dangerous working conditions are making healthcare professions unattractive to young Europeans, who are increasingly reluctant to enter the field, especially in some professional fields such as nursing or emergency medicine.

The Bucharest Declaration[17], signed in March 2023 by 50 WHO/Europe Member States, calls for comprehensive action to improve recruitment and retention, enhance workforce planning, and increase public investment in training on digital technologies. Collaborative efforts involving all stakeholders are essential to address these challenges.

Figure 12. Challenges and priorities of action in the healthcare workforce
- Source: elaboration by TEHA, 2024

[16] WHO Europe (2022), "Health and care workforce in Europe: Time to act".
[17] WHO (2023), "Bucharest Declaration on health and care workforce. High-level Regional Meeting on Health and Care Workforce in Europe: time to act".

Scientific research and innovation in the field of medicine is going through a period of rapid growth

European healthcare systems have continuously transformed in response to various factors, such as rapidly changing epidemiology, demographic transitions or socio-economic crisis, but also to respond to scientific and technological breakthroughs, and disruptive innovations that are altering medical practice. Many of these developments were already underway prior to the COVID-19 pandemic, but the pandemic accelerated their adoption into daily practice. Changes that might have taken 5 to 10 years to enter routine practice became the new normal within a few weeks in many countries.

One of the most significant contributors to this acceleration is the advent of new technologies. The rise of artificial intelligence (AI) and machine learning is revolutionising data analysis, enabling researchers to process vast amounts of information quickly and accurately. This is facilitating breakthroughs in understanding complex diseases, leading to the development of more targeted and effective treatments.

The past decade has also seen unprecedented levels of global collaboration in the scientific community. Researchers, universities, institutions and industry have come together to share knowledge, resources, and expertise. This collaborative spirit has been particularly evident during the COVID-19 pandemic, where the rapid development of vaccines were made possible through international cooperation. Such partnerships have accelerated the pace of discovery and ensured that innovations reach patients more quickly. The ongoing acceleration research is also reflected in the continued growth in the number of scientific publications and the number of pharmaceutical products in pipeline.

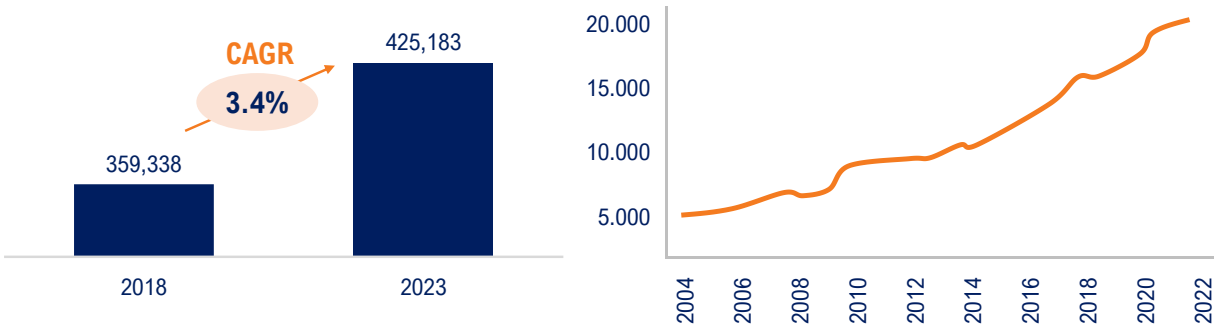


Figure 13. On the left: Scientific publications in the field of medicine in EU27+UK countries (number), 2018 and 2023. On the right: Products in the global pharmaceutical pipeline (number), 2004-2022 - *Source: TEHA on Scimago and EvaluatePharma data, 2024*

European healthcare systems have an economic sustainability issue

European healthcare systems face a significant challenge to their economic sustainability due to a complex set of factors. An ageing population, which is increasingly fragile, contributes to higher healthcare demands. Concurrently, there is a rise in the prevalence of non-communicable diseases (NCDs) and infectious diseases, further straining healthcare resources.

The European Commission's 2024 Ageing Report[18] highlights a critical relationship between population ageing, health and healthcare expenditure. The findings reveal that a healthier ageing leads to reduced demand for medical services, subsequently easing the financial burden on healthcare systems. This underscores the vital importance of investing in preventive measures to maintain public health and manage long-term healthcare costs effectively. The report presents a stark contrast between two potential scenarios. In a situation where Europeans age unhealthily, healthcare systems could face an additional 1.2% of GDP in healthcare expenditure by 2070, compared to a scenario of healthy ageing (8.1% vs. 6.9% of GDP). These projections serve as a compelling argument for policymakers to prioritise and invest in prevention.

The current poly-crisis - encompassing economic, geopolitical, and climate-related challenges - exacerbates these issues by impacting on demographic transitions and disease burdens, while also directly threatening fiscal sustainability through slower economic growth. Addressing these intertwined challenges is essential to ensure the long-term viability of healthcare systems across the EU. While there are many potential solutions, it is crucial to implement comprehensive strategies that reduce the incidence and severity of diseases, lowers long-term healthcare costs, and enhances the overall health and wellbeing of the population.

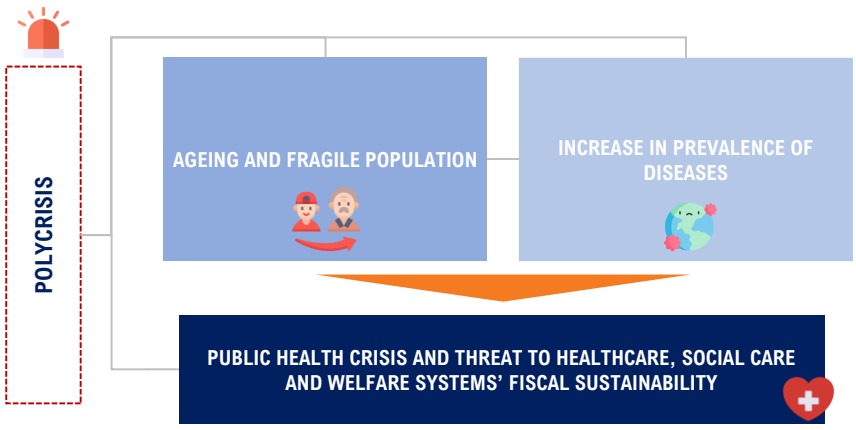


Figure 14. The interconnected factors impacting public health and healthcare systems' fiscal sustainability - *Source: elaboration by TEHA, 2024*

[18] European Commission (2024), "2024 Ageing Report. Economic and Budgetary Projections for the EU Member States".

In a context of increasing budget constraints for all EU Member States, the "New Economic Governance Framework" (entered into force on April 30th, 2024) provides for the opportunity to **consider investments in the healthcare sector** – especially in prevention (in particular immunisation) – as **"social security investments"**, similarly to what has been done for investments in defence and digital and green transition.

Given this new framework, the **possible inclusion of investments in healthcare** in the perimeter of the "New Economic Governance Framework" would not only allow for a greater degree of flexibility in an unstable economic scenario but would also lead to greater spending in areas with positive effects on the **health and wellbeing of the population**

THE FISCAL AND ECONOMIC OUTLOOK IN EUROPE

Analysis of the economic and financial situation in Europe

Between 2013 and 2023, the average real GDP growth rate in the European Union has been consistently low, averaging below 1.7% per year. Looking ahead, this trend is not expected to change significantly. In 2024, for instance, the EU economy is projected to expand by only 1.1%, while the American economy is expected to grow by 2.7%. Meanwhile, emerging economies continue to outpace the EU in terms of growth.

Several factors contribute to this slow growth: a key factor is the level of investment. By 2016, EU Government investment had declined to a twenty-five-year low of 2.8% of GDP. Although there has been a slight recovery since then, notably due to the Next Generation EU investment plan, investment levels remain insufficient to drive significant economic growth.

The European Central Bank's recent interest rate hikes, necessary to control inflation, have also negatively impacted the economic outlook. Among the countries with the lowest projected growth rates in 2024 are some of the EU's largest economies.

Germany, the largest economy in Europe, is projected to grow by only 0.1%. Italy (0.9%) and France (0.7%) are similarly struggling to improve their economic performance. Low growth results in fewer resources available for EU Member States, leading to reduced investment. This, in turn, perpetuates a vicious cycle of slow growth.

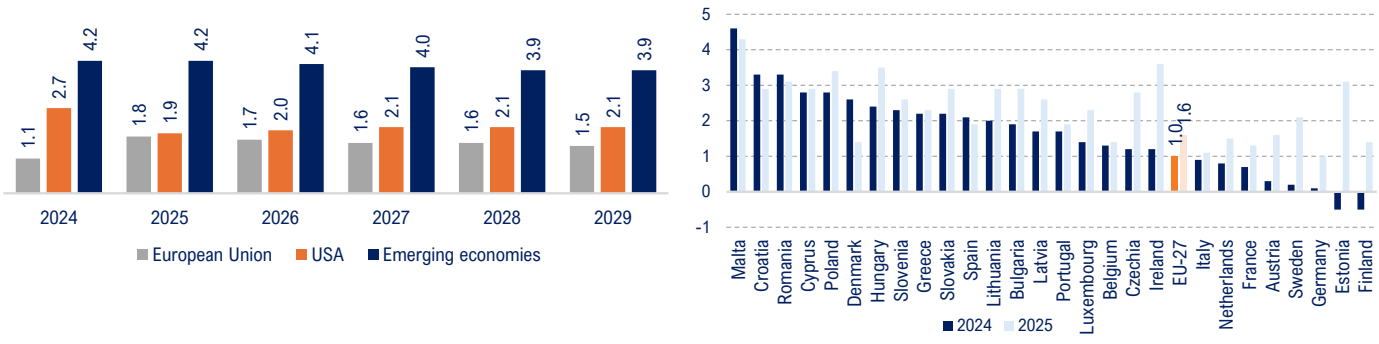


Figure 15. On the left: Real GDP growth projection by macro area (in %), 2024 – 2029. On the right: Real GDP growth projection at EU level (in %), 2024 and 2025
– Source: TEHA on IMF data, 2024

Following the COVID-19 pandemic, deficit levels across the European Union initially showed signs of improvement. From an average deficit of -6.7% of GDP throughout the EU in 2020, the deficit levels improved to -3.4% of GDP in 2022. However, in 2023, deficit levels increased slightly again to -3.5% of GDP. This reflects significant pressures on Government spending.

Several factors contribute to this persistent fiscal challenge. As previously discussed, an ageing population results in decreased tax revenues while simultaneously increasing the demand for healthcare and social care services. This dual pressure exacerbates fiscal deficits as Governments struggle to balance the need for higher healthcare and welfare spending with declining revenue. Slow economic growth further complicates the fiscal landscape, limiting the capacity of Governments to generate the necessary revenue to offset rising expenditures.

The war in Ukraine and the subsequent energy crisis have also significantly impacted EU Member States' public finances. Overall, EU countries spent €390 million in 2022 alone to support businesses and families with the increased cost of energy.

Notably, some of the largest deficits in 2023 were recorded by the EU's second and third-largest economies: France and Italy. France reported a deficit of -5.5% of GDP, while Italy's deficit reached -7.4% of GDP. Overall, 11 Member States have recorded a deficit above the EU's 3% rule in 2023.

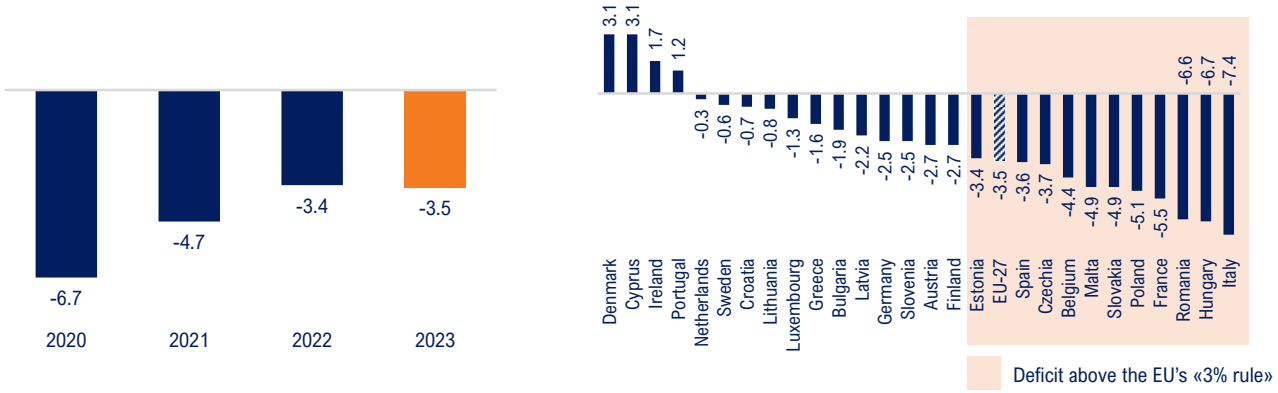


Figure 16. On the left: Government deficit in the EU (% of GDP), 2020 - 2023. On the right: Government surplus/deficit (% of GDP), 2023 - *Source: TEHA on IMF data, 2024*

Despite recent efforts, public debt levels in the European Union remain high. While there has been a slight decrease in overall debt levels, which declined from 90.0% of GDP in 2000 to 81.7% of GDP in 2023, debt levels still exceed the EU's ceiling of 60% of GDP in 13 Member States. Four years after the COVID-19 pandemic caused a spike in public debt, its level remains above that of 2019.

As of 2023, overall public debt in the EU amounts to €13.9 trillion. A high debt burden poses a risk to fiscal stability, and its containment represents a priority for EU fiscal rules. However, it is crucial to manage debt containment without resorting to cuts in public investment in key areas, which are essential for sustainable economic growth. Instead, strategic investments in areas such as healthcare, green and digital transitions, and social resilience are vital to ensure long-term fiscal sustainability and economic growth.

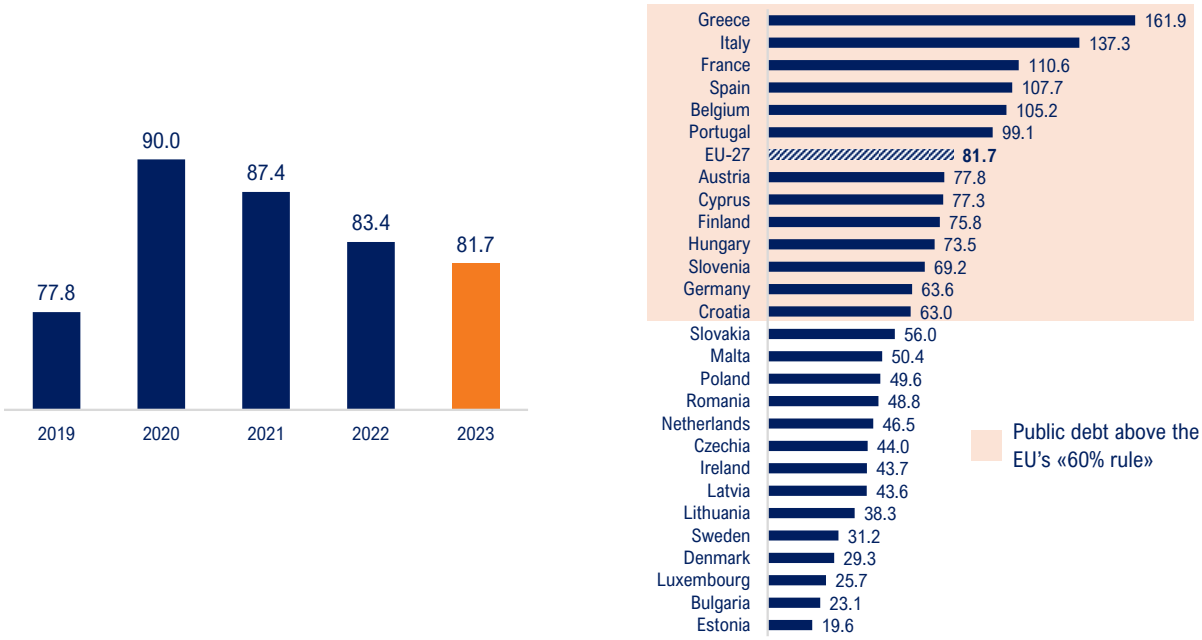


Figure 17. On the left: Public debt in the EU (% of GDP), 2019-2023. On the right: Public debt at EU level (% of GDP), 2023 - *Source: TEHA on IMF data, 2024*

The SGP has proven unable to address the EU's fiscal challenges

The Stability and Growth Pact (SGP), introduced in 1997, aimed to ensure fiscal discipline within the European Union, preventing excessive Government deficits and maintaining economic stability by setting limits on budget deficits and public debt levels. While designed to constrain Government expenditure during economic crises, the SGP has, in some cases, inadvertently led to suboptimal resource allocation.

To comply with the SGP, Governments often opted to reduce investments rather than current spending. This choice, influenced by political factors, stems from the perception that investments are more flexible items in Government balance sheets. However, this approach has compromised long-term growth potential by limiting essential investments. For instance, in healthcare, it resulted in lower spending on prevention, despite the Commission's long-standing recognition of the role of public health in improving fiscal sustainability[19], which often translated into Country-specific recommendations asking specific Member States to improve their prevention and public health policies.

Further limitations of the SGP include the requirement for countries to meet fiscal targets annually, which does not allow for necessary flexibility to balance budgets over the economic cycle. Governments may need to increase spending during downturns and save during booms to stabilise their economies, but the SGP's rigid rules don't accommodate this need.

Moreover, the SGP has suffered from an enforcement gap. When its rules were breached, the Commission did not consistently follow through with the excessive deficit procedure, undermining the credibility of the overall framework.

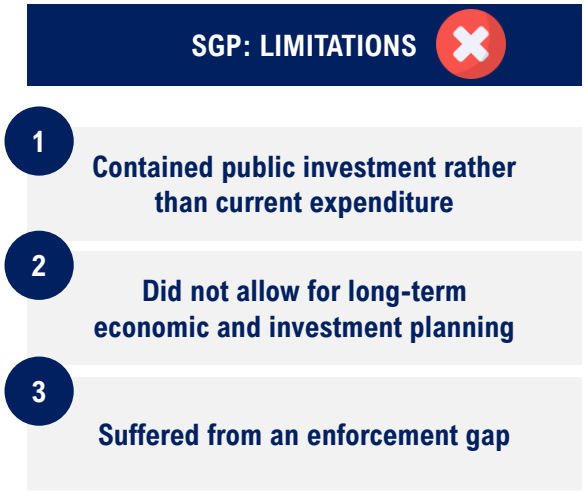


Figure 18. SGP limitations - *Source: elaboration by TEHA, 2024*

[19] European Commission (2016), "Joint Report on Health Care and Long-Term Care Systems & Fiscal Sustainability".

The New Economic Governance Framework represents a step in the right direction

The New European Economic Governance Framework, entered into force on April 30th, 2024, has been designed through a re-evaluation of the performance of the Stability and Growth Pact (SGP) during the financial and COVID-19 crises. Since its launch in 1997, EU priorities have evolved. The new framework maintains a strong focus on reducing public deficits and debts while also prioritising economic growth, aiming to learn from past shortcomings.

Under the new framework, Member States with public debt exceeding 60% of GDP and/or deficits above 3% of GDP will establish country-specific 4-year medium-term fiscal-structural plans with the Commission. These plans will outline a path toward fiscal sustainability over a multiannual period, spanning four years initially, with the possibility of extension to seven years in certain cases[20].

Within these plans, public investments in four key priority areas identified by the Commission will receive increased flexibility: green and digital transition, defence, economic and social resilience. Unlike the SGP, the plans agreed upon under the new framework address not only fiscal adjustments but also investments and reforms. Moreover, country-specific adjustment paths can be planned on 7 years rather than 4 provided that the investment plan is aligned with the priorities identified by the EU.

The new framework recognises the need for reforms and investments to address shared challenges, and the updated fiscal rules will accordingly consider public health policies in terms of their impact on economic growth and fiscal sustainability, acknowledging their significance beyond the public health sector.

To assist the countries in formulating their medium-term plan, the European Commission has provided each Member State with a reference trajectory, i.e. the path for net primary spending that, according to the European Commission, countries should follow to reach the plan's objectives. Countries can deviate from the proposed trajectory, but to do so must provide evidence that proves that this deviation does not endanger the reduction of public debt and deficit levels.[21]

[20] European Commission (2024), "The New Economic Governance Framework".
[21] Bordignon M, Turati G, Milani E and Bianco D (2024), "Spending for preventive healthcare and EU fiscal rules Is there more room after the SGP reform?".

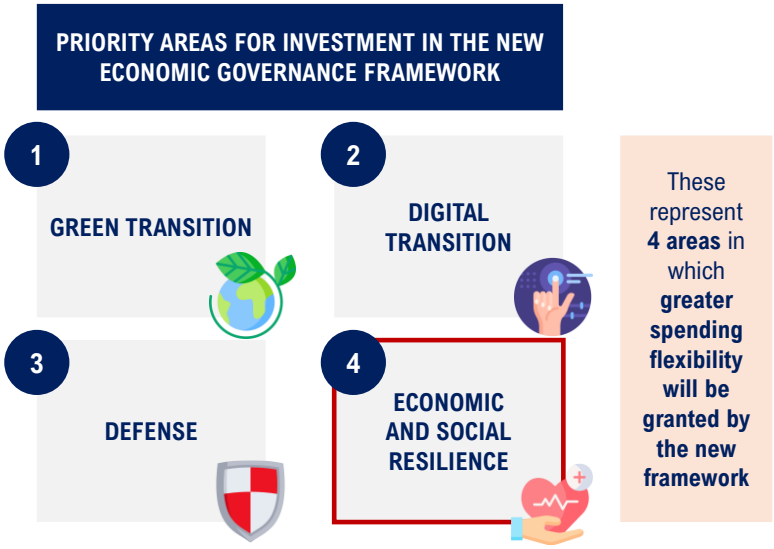


Figure 19. Priority areas for investment in the New Economic Governance Framework - *Source: elaboration by TEHA, 2024*

This represents a significant opportunity for increased investments in preventative care, that have been demonstrated to be not only cost-effective but also cost-saving in many cases, as will be discussed in the following chapters.

Overall, the New European Growth Framework (NEGF) provides for a more gradual debt reduction path compared to current rules, offers greater leeway for investments, and allows for country-specific adjustment paths instead of rigid general rules.

As European Union Member States prepare to submit their National Medium-Term Fiscal-Structural Plans to the European Commission by September 20th, 2024, there is a critical window of opportunity to prioritise investments in health prevention. The New Economic Governance Framework emphasises economic and social resilience as a priority investment area, offering Member States greater flexibility to invest in health promotion and disease prevention programs, which fall under its scope.

In an era of increasing budget constraints, a proactive approach to healthcare - through prevention - **stands out as the path forward for European countries**. Emphasising prevention has positive effects on population health and yields significant socioeconomic benefits.

Proactive healthcare **shifts the focus from treating diseases to preventing them**, thereby enhancing the overall health and well-being of the population. This approach reduces the incidence and severity of chronic and infectious diseases, leading to improved quality of life and longevity.

Moreover, the socioeconomic impacts of prevention are substantial. By reducing the prevalence of diseases, prevention lowers healthcare costs and alleviates pressure on healthcare systems. This, in turn, **improves the sustainability of healthcare and welfare systems**, ensuring they can provide better services without overwhelming financial burdens. Additionally, a healthier population contributes to a more productive workforce, driving economic growth and stability.

THE VALUE OF PREVENTION FOR EUROPE

Prevention consists in a three levels of clinical and non-clinical activities

The primary goal of prevention is to maintain the health status of individuals through interventions aimed at reducing the risk of disease and promoting good health (physical, mental, and social well-being).

All types of prevention - primary, secondary, and tertiary - are fundamental to the promotion of good health for citizens. Since absenteeism from work, declining productivity, reduced income, early exit from the labour market, and increasing dependence on the social security system are all cost factors related to health status, investing in prevention means not only containing costs for healthcare systems but also promoting the country's economic growth.

The promotion of healthy living until late in life, contextualised in a scenario of rapid demographic ageing and limited resources, represents one of the greatest challenges to the resilience of the current health and welfare system. The central role of prevention stems precisely from this: being able to reduce the onset of disease means limiting the impacts on both the health of citizens and the sustainability and efficiency of tomorrow's health, social, and welfare systems, freeing up resources otherwise devoted to hospitalisations and healthcare services and, at the same time, preserving people's quality of life and productivity.

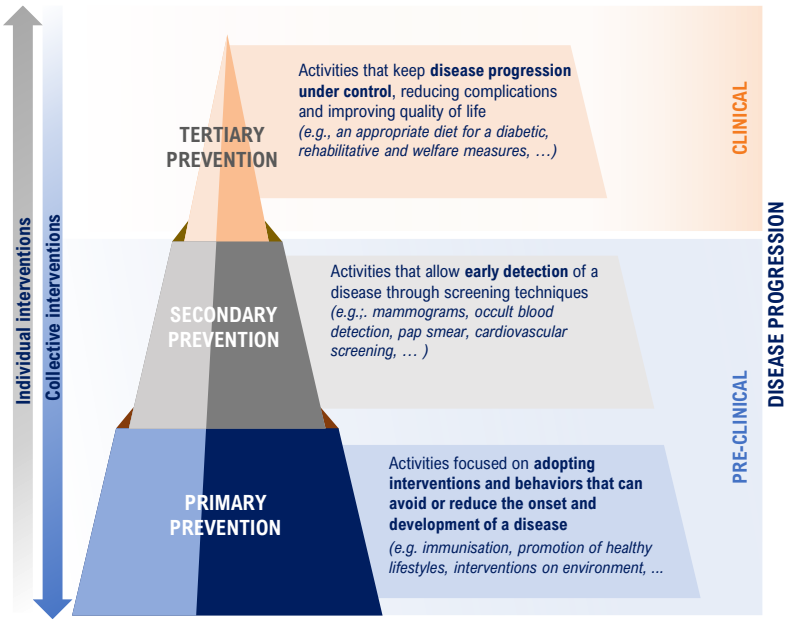


Figure 21. Types and objectives of different prevention activities
– Source: TEHA on WHO data, 2024

The health benefits of prevention

In 2021, over 1 million premature deaths across EU countries could have been avoided through better prevention and healthcare interventions. Of these deaths, 64% were preventable through effective primary prevention and public health measures, while 36% were treatable through more effective and timely healthcare interventions.

The challenge lies in better and more equitable application of existing knowledge at the EU level. Significant achievements have been made, but gaps within and between countries show enormous potential for health gains in Europe. As a matter of fact, preventive healthcare offers extensive health benefits that are yet to be fully realised, in addition to significant benefits in terms of quality of life. Data on risk factors, screening adherence, and vaccination coverage, when available, indicate significant room for improvement.

— Adopting healthy lifestyles—balanced nutrition, regular exercise, sufficient sleep, and avoiding harmful habits—reduces the risk of chronic diseases.

— Regular screenings for diseases like cancer, diabetes, and hypertension enable early detection and better treatment outcomes.

— Finally, vaccination is highly effective and cost-efficient for preventing infectious diseases, contributing to individual and herd immunity. Improving vaccination rates across the life course, especially among vulnerable groups, through public education and accessible healthcare is crucial in preventing outbreaks and protecting public health.

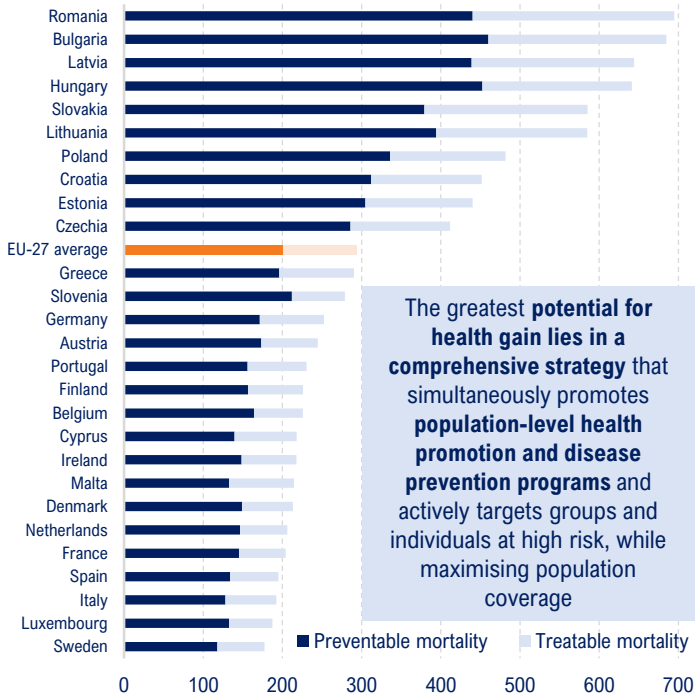


Figure 22. Standardised death rates for avoidable diseases, persons aged less than 75 years (per 100,000 inhabitants), 2021 - *Source: TEHA on Global Burden of Disease data, 2024*

The economic and fiscal benefits of prevention

Despite offering significant economic and fiscal advantages, beyond its well-known health benefits, prevention has never been central in healthcare systems throughout Europe. Nevertheless, the evidence indicates that by promoting healthy lifestyles, implementing regular screenings, and ensuring life course immunisation, preventive measures reduce healthcare costs, alleviate the burden on healthcare systems, and contribute to a healthier, more productive workforce.

However, the path to enhancing prevention efforts is fraught with challenges. For example, vaccine hesitancy has grown in the aftermath of the COVID-19 pandemic, posing a significant barrier to achieving adequate coverage rate levels for various vaccine-preventable diseases. Similarly, promoting healthy lifestyles and increasing participation in regular screenings requires overcoming behavioural and systemic obstacles. These challenges represent significant obstacles to the paradigm shift necessary to move towards a prevention-based healthcare model.

The economic benefits of prevention are well-documented and substantial. A vast body of academic literature attests to the high return on investment (ROI) of various preventive measures. In this scenario, understanding the economic and fiscal benefits and costs of preventive health interventions enables policymakers and program managers to make better-informed decisions about where and how best to invest to order to improve the health of the population. While the economic dimension is only one of many inputs to consider when considering the merit of an intervention, having such knowledge on hand allows for a more rigorous, systematic, and transparent decision-making process in a context of limited resources public resources.

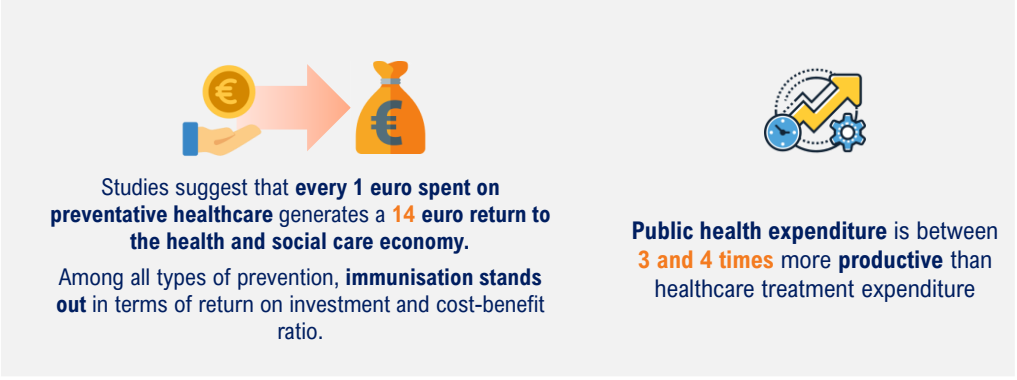


Figure 23 Return on investment on prevention - *Source: TEHA on Masters, Rebecca, et al. "Return on investment of public health interventions: a systematic review." J Epidemiol Community Health 71.8 (2017) data, 2024*

Prevention has been shown to be the most cost-effective avoidable disease measure, but investments are lacking

Despite the broad consensus garnered by such considerations and the numerous calls from the WHO and OECD – especially in the post-pandemic period – on the urgency of increasing the resilience of healthcare systems, the analysis of budgets dedicated to prevention by various countries reveals significant room for improvement.

Although spending on health protection and prevention as a proportion of total public current health expenditure almost doubled in EU countries between 2020 and 2021 (rising from 3.5% to 6.0% due to COVID-19, an increase that is not expected to be permanent), when compared to the resources allocated to treatment, which account for over 65% of the total, this share remains relatively modest, and risks being insufficiently aligned with the current demographic and epidemiological scenario. As the pandemic showed, the continuous lack of investment in prevention have resulted in limited health resilience of the population.

Prevention is the most cost-effective – and in most of the cases cost-saving - avoidable disease measure. However, prevention programs (in particular immunisation strategies) remain highly vulnerable to budget cuts as their benefits may not be immediately and fully identifiable. It is therefore pivotal to increase the awareness among decision makers of how prevention strategies should be considered as the only alternative for the sustainability of healthcare, social care and welfare systems by providing concrete examples.

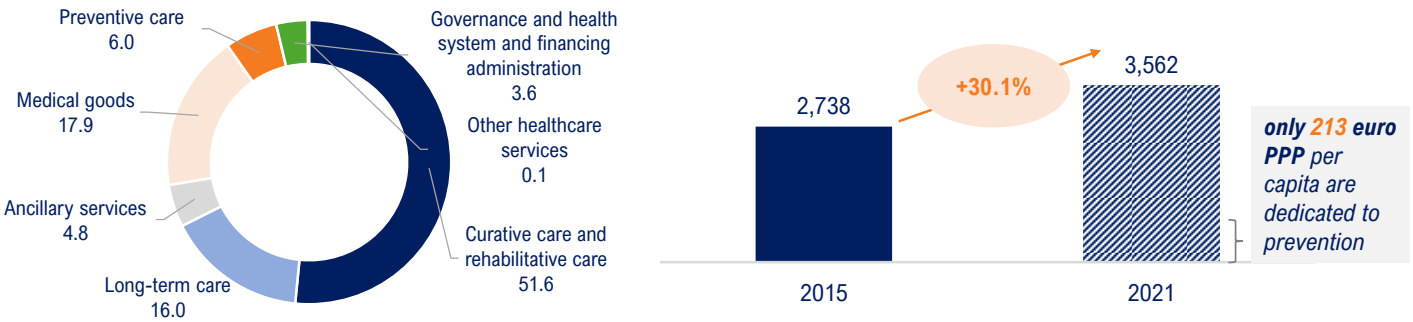
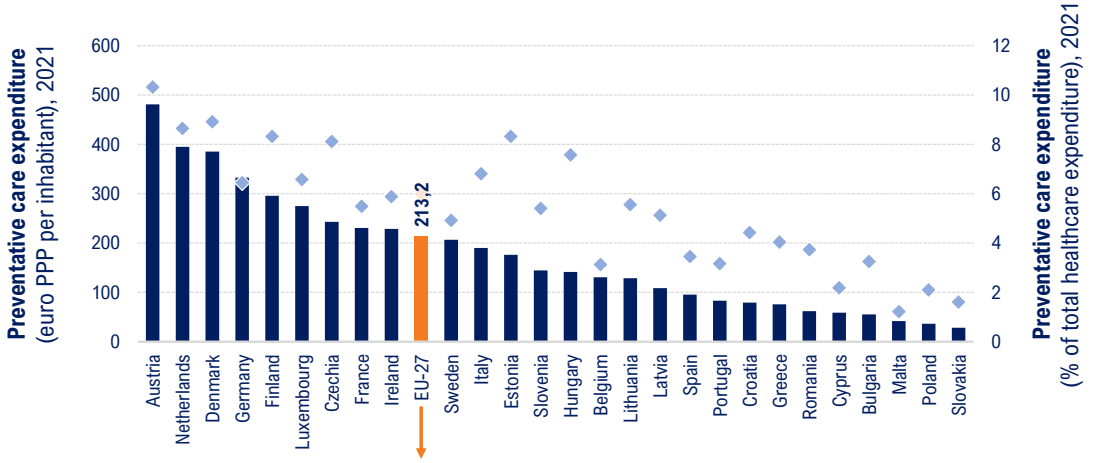


Figure 24. On the left: Healthcare expenditure by function at EU-27 level (% of total), 2021. On the right: Healthcare expenditure per capita at EU-27 level (euro PPP), 2015 and 2021 - *Source: TEHA on Eurostat data, 2024*

Expenditure in prevention shows a great variability across EU countries: the highest shares of preventive healthcare expenditure were recorded in Austria (10.3% of total health expenditure) and Denmark (8.9%). In contrast, the lowest share was recorded in Slovakia (1.6%) and Poland (2.1%).

Relative to population size, in 2021, among EU countries, preventive healthcare expenditure was highest in Austria (481 euro PPP per inhabitant) and the Netherlands (395 euro PPP per inhabitant). Meanwhile, it was lowest in Poland (36 euro PPP per inhabitant) and Slovakia (28 euro PPP per inhabitant).



Despite substantial heterogeneity in data, it is estimated that **77% of the European countries spend less** than **0.5% of their healthcare budget on immunisation**. Also, it is difficult for countries to estimate funds allocated to vaccination due to **high variability and reliability in terms of the level of publicly available data**.

Note: The data reported above may not be entirely accurate, as obtaining a precise breakdown of healthcare expenditure for prevention and immunisation from each Member State is challenging. These expenditures may be distributed across various categories, making exact reporting difficult and raising comparability issues across Member States.

Figure 25. Preventative care expenditure at EU-level (euro PPP per inhabitant and % of total healthcare expenditure), 2021 – *Source: TEHA on Eurostat and Vaccines Europe data, 2024*

Prevention is the key to European healthcare, social care and welfare systems' economic sustainability

Prevention is indispensable for maintaining the health status of the population and for ensuring the economic sustainability of European healthcare, social care, and welfare systems. The interconnected impact on health, productivity, the economy, and the fiscal sustainability of these systems underscores the critical and multifaceted value of preventive measures. Prevention represents a significant value to society that must be recognised by both the population and policymakers.

Today, it is crucial to act on two fronts: firstly, tackling the most urgent issues limiting the efficiency and functionality of the system, such as long waiting lists and staff shortages. Secondly, securing the economic foundation of the healthcare system, balancing healthcare spending with the needs of the population. Given that public healthcare funding is closely tied to the country's taxable capacity, which is linked to the working-age population — a demographic in constant decline, particularly in the European context — it is essential to renew the paradigm through which out healthcare systems operate to ensure their continuity.

Considering the current demographic and epidemiological context — characterised by declining birth rates, an ageing population, and a consequent rise in chronic diseases — only addressing the funding side of the equation is insufficient. To secure the long-term sustainability, it is of strategic importance to simultaneously work on the demand side. This involves finding strategies to limit the rise in healthcare spending without negatively impacting on the health of the population. Central to this approach is a robust policy of prevention which, as illustrated in this chapter, not only provides for extensive health benefits to the population but also play a decisive role in reducing the financing needs of healthcare, social care and welfare systems.

The benefits of prevention are vast and certain at the population level, yet they often appear small and uncertain to individual voters. This discrepancy highlights the need for effective communication strategies that explain the personal benefits of preventive measures to different segments of the population. To do so effectively, different segments of the population require different approaches. Younger individuals may already be attentive to healthy lifestyles but less so to immunisation, while the elderly may prioritise vaccination over lifestyle changes. Tailoring messages to these groups can help bridge the perception gap and foster a culture of prevention.

In this scenario of limited financial and material resources, maintaining population healthy represents both a complex challenge and a significant opportunity. Prevention is no longer merely an option, but a necessity to preserve the European healthcare, social care and welfare systems as we know them and guarantee their long-term sustainability. By investing in preventive measures, healthcare, social and welfare systems will remain viable and capable of meeting the needs of the population.

Prevention returns to the public debate as a "new priority" not only for the sustainability of the healthcare system but also as an essential element for the growth and well-being of the country. It is imperative to embrace prevention as a cornerstone of healthcare strategies through a paradigm shift from treating diseases to maintaining good health. While transitioning to a prevention-focused model is difficult, it is the only sustainable solution for the future of EU's healthcare, social care, and welfare systems.

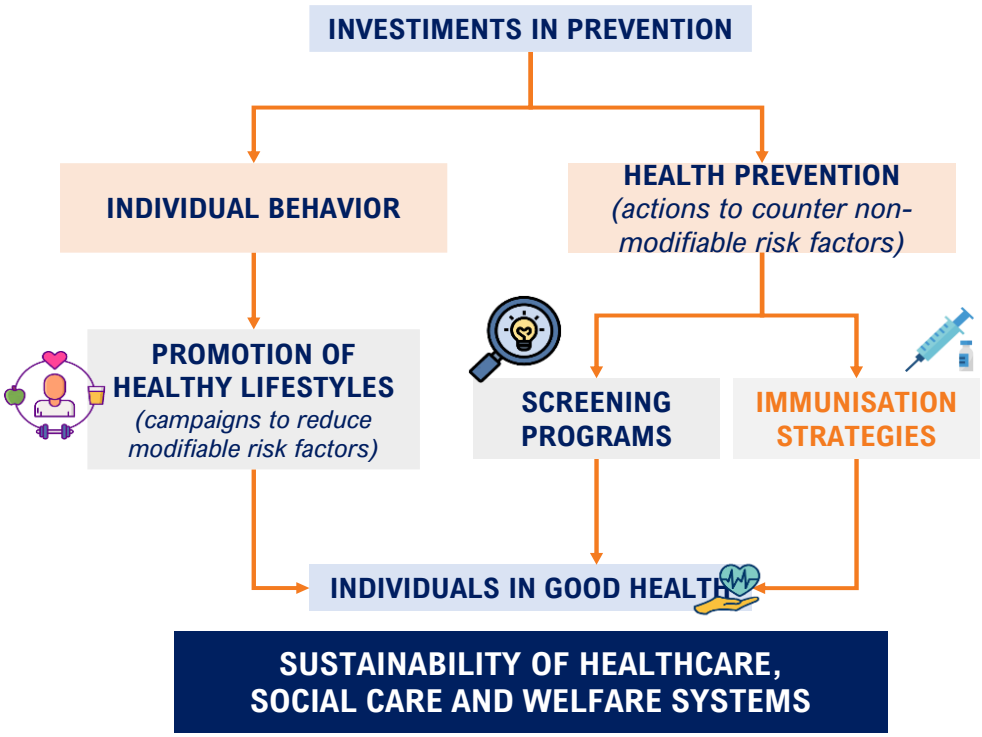


Figure 26. Prevention is the key to European healthcare, social care and welfare systems' economic sustainability - *Source: elaboration by TEHA, 2024*

Bridging the prevention gap: The power of effective Communication in Healthcare

The value of prevention in healthcare cannot be overstated, yet it remains an underutilised aspect of public health strategy. Despite the abundance of resources and often free access to preventive services, such as vaccinations and health screenings, a significant portion of the population fails to take advantage of these life-saving measures. This paradox underscores a critical gap in the approach to public health: there is a need for more effective communication strategies to convey and explain the benefits of prevention to the population, especially those who fail to take advantage of available resources, such as individuals suffering from vaccine fatigue.

An analysis by the OECD[22] provides compelling evidence for the efficacy of prevention-focused communication. Among various prevention packages evaluated, those centred on communication strategies demonstrated the highest value for money in terms of reducing cases of cardiovascular diseases, cancer, diabetes, and dementia. This finding highlights the pivotal role that well-crafted, persuasive messaging plays in encouraging the adoption of preventive healthcare measures, particularly among vulnerable groups and populations traditionally underserved by healthcare services.

The challenge lies in developing communication strategies that not only inform but also motivate action across diverse segments of society. It is imperative that these messages effectively convey the health, economic, and social benefits of prevention to individuals, communities and policymakers. Furthermore, the engagement of civil society organisations is crucial in this challenge, as they can exert pressure on Governments to increase investments in preventive healthcare. By bridging the gap between available preventive services and their utilization through targeted, persuasive communication, public health outcomes can be significantly improved and the full potential of prevention in European healthcare systems can be reached.

[22] Intervention by Michele Cecchini (Head of Public Health, OECD) at the Roundtable organised by The European House – Ambrosetti on July 10th, 2024, in Brussels and online.

The EU has launched several investments programs focused on prevention

The European Union has made significant strides in investing in preventive health measures through various investment programs focused on prevention.

One of the flagship initiatives is the EU4Health program (2021-2027), launched in 2021 as one of the main instruments to pave the way to a European Health Union, with a substantial budget of 5.3 billion euro in response to the COVID-19 pandemic. EU4Health dedicates 20% of its annual budget to health promotion and disease prevention activities. This includes funding for partnerships aimed at preventing diabetes, cardiovascular diseases, and cancer. The program also supports educational initiatives on health determinants and campaigns to raise health awareness and literacy.

Another initiative is the "Healthier Together – EU Non-Communicable Diseases Initiative", launched by the European Commission in late 2021. This initiative supports Member States in reducing the impact of NCDs and improving citizens' health and well-being. It aims to achieve the United Nations Sustainable Development Goal 3.4, which targets a 30% reduction in premature mortality from NCDs and the promotion of mental health and well-being by 2030.

During the COVID-19 pandemic, the EU played a pivotal role in vaccine procurement, ensuring that Member States had access to life-saving vaccines. This effort was crucial in mitigating the effects of the pandemic and highlighted the importance of coordinated action and investment in preventive measures. The successful procurement and distribution of vaccines across the EU not only saved countless lives but also underscored the necessity of a robust preventive health infrastructure and the power of data to inform decision-making.

Beyond the policies put in place as a response to the COVID-19 pandemic, the European Commission is continuing to work in collaboration with WHO/Europe and UNICEF on raising awareness about the benefits of vaccination, boosting vaccine confidence to sustain public demand for vaccines, and helping ensure health systems are adequately prepared for any future epidemic or pandemic. This effort also comes as a result of the decline in vaccination rates in some Member States in recent years.

The Technical Support Instrument (TSI) initiative of the DG REFORM

The Technical Support Instrument (TSI) is an EU programme, coordinated by DG REFORM, that provides tailor-made technical expertise to Member States – both at the national and regional level – to help design and implement reforms that can improve the resilience of their economies and societies. The programme benefits from a budget of €864 million for the period 2021-2027 and does not require co-financing on behalf of Member States.

The TSI has focused much of its resources on the promotion of health interventions throughout the EU. For example, by implementing programmes to improve cancer care coordination in Latvia and Slovakia, supporting mental health in Denmark, and launching the Health ICT governance framework in Estonia. In terms of health prevention, interventions include the elaboration of cancer screening strategies, measures to prevent AMR and early mental health promotion among adolescents.

In 2025, the TSI will launch the "Investment in Resilient Health Systems" initiative with the aim of analysing healthcare spending and other data to identify efficiency gains, supporting the development of monitoring and evaluation mechanisms in national healthcare systems, and help Health Ministries navigate and identify EU funds and instruments.

In the future, the aim is to establish an EU Health investment Hub in consultation with Member States in order to "provide on-demand, tailored and fit for-purpose support to Member States". The main goals of this Hub will be to facilitate access to EU funds, avoid duplication, complement other Hubs/Advisory services and provide tailored services to Member States' needs and health priorities.[23]

In this complex scenario, the EU has the potential to play a pivotal role in improving health across its Member States through coordinated actions in three crucial pillars: Research & Development, availability of prescription medicines, and the delivery of preventive healthcare.[24]

R&D is fundamental for the advancement of healthcare. The EU has recognised this through various resolutions and strategies, such as the pharmaceutical strategy for Europe and the Strategic Technologies for Europe Platform (STEP). By fostering a collaborative environment for EU-wide clinical trials and supporting early-stage biotech companies with seed funding, the EU can enhance innovation and bring cutting-edge treatments to the market faster.

[23] Intervention by Simone Gelmetti (Policy Officer & Country Coordinator for Finland, Unit B.1 'Revenue Administration & Public Financial Management', DG REFORM, European Commission) at the Roundtable organised by The European House – Ambrosetti on July 10th, 2024.
[24] Intervention by Meena Fernandes (Policy Analyst, European Added Value Unit, Directorate for Impact Assessment and Foresight, Directorate-General for Parliamentary Research Services, European Parliament) at the Roundtable organised by The European House – Ambrosetti on July 10th, 2024.

Ensuring the availability of prescription medicines is another critical area where the EU can make a significant impact. The disparities in access to high-value medicines across Member States can be mitigated through the establishment of a European 'common pharmaceutical culture', potentially saving the EU between €4 to €8 billion annually due to reduced premature mortality.

Importantly, the delivery of preventive healthcare also stands out as an area where the EU can profoundly influence public health outcomes. The European Parliament has taken steps to strengthen preventive healthcare through resolutions on cancer strategy and sexual and reproductive health rights (Resolution 2020/2267 of 2022 and Resolution 2020/2215 of 2021).

By defining essential preventive health services at the EU level and standardising screening guidelines and prevention programs, the EU can enhance the effectiveness of these measures. For instance, increasing the screening rates for cancers and improving immunisation coverage can save thousands of lives annually and allow for effective elimination strategies such as in the area of HPV and HPV-related cancers.

Inefficiencies in procurement and preventive healthcare currently account for up to 2.1 million deaths in the EU, but a modest reduction of these inefficiencies by 5% could save approximately 109,000 lives each year.

Moreover, enhancing preventive healthcare can reduce the incidence of infectious diseases significantly. Standardised and adequate immunisation policies and reduced inefficiencies in preventive healthcare across Member States could prevent about 74,000 deaths annually.

The concept of the "cost of non-Europe"[25] quantifies the missed opportunities from not having a more integrated and stronger EU approach in health policy. In health policy alone, this cost is estimated at €460 per capita per year (€206.6 billion for the entire EU), reflecting the potential health benefits that could be achieved through better coordination and more efficient healthcare delivery across the EU.

[25] European Parliamentary Research Service – EPRS (March 2024), "Cost of non-Europe in health policy".

As shown in the previous chapter, if, from a health perspective, investing in prevention means contributing to increased life expectancy and improved quality of life, at the system level, promoting wellbeing and protecting people's health means laying the **foundations for healthy growth of younger generations; increasing the productivity of working-age groups, thereby supporting the country's economic and social growth**; and fostering active and healthy ageing for the elderly, with positive impacts on healthcare spending and the welfare system.

Greater prevention, therefore, results not only in better health, but also in socioeconomic and fiscal benefits related to the country's growth and development. Moreover, the containment of public spending frees up resources that could be dedicated to improving the quality of services provided, to the research and development of treatments for diseases that are still untreatable and to investments in, for example, education or employment.

The following chapter analyses **3 different cases studies highlighting the socio-economic return of investing in prevention** (promotion of healthy lifestyles, screening programs, and immunisation strategies)

CASE STUDIES

The epidemiology and the burden of cancer in Europe

In 2021, over 3.9 million cancer cases were diagnosed in Europe, with more than 1.1 million deaths, making cancer the EU's second leading cause of death (21.6% of total deaths). Europe, with 10% of the global population, accounts for 25% of cancer cases. Without decisive action, cancer deaths in the EU could rise by over 24% by 2035, becoming the leading cause of death.

Since the early 1990s, cancer death rates in Europe have declined due to reduced risk factors (like smoking), immunisation (for HBV and HPV-related cancers), earlier detection, and improved treatments. The 5-year survival rate for all cancers has increased, with notable improvements in several EU countries. Despite these advancements, cancer remains the second leading cause of mortality. Early screening for common cancers (breast, cervical, colorectal, prostate, and lung for heavy smokers) has contributed to this improvement by enabling earlier diagnosis and treatment.

The economic impact of cancer in Europe exceeds 100 billion euros annually. Costs for individuals with cancer, including direct payments and out-of-pocket expenses, are significantly higher than for those without cancer, with public health insurance and national healthcare systems covering most treatment expenses. Hospital care, outpatient services, and prescription medications constitute the bulk of these costs.

Cancer imposes severe financial burdens on patients and families. Many survivors face high out-of-pocket medical expenses, with approximately 1 in 4 patients struggling to pay bills and one-third worrying about medical costs. Additionally, cancer causes substantial indirect costs from lost income, with significant lost earnings among the working-age population in Europe, underscoring the disease's extensive economic burden.

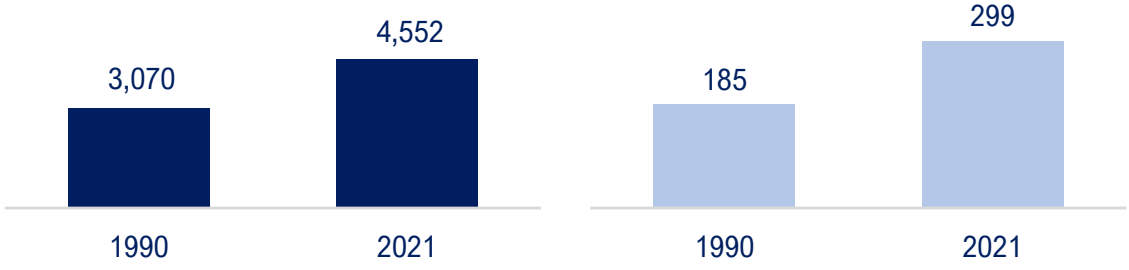


Figure 27. On the left: Prevalence of cancer in the EU (per 100,000 inhabitants), 1990-2021. On the right: Years-Lived-with-Disability due to cancer in the EU (per 100,000 inhabitants), 1990-2021 – *Source: TEHA on GBD data, 2024*

The importance of investing in cancer screening and early diagnosis

Five-year survival rates for cancer are significantly higher for those diagnosed in earlier stages.

— One study[26], published in 2020, examined the potential reductions in cancer-related deaths if malignancies diagnosed after metastasis were, instead, diagnosed at earlier stages.

— Although stage IV cancers represented 18% of all diagnoses, they accounted for 48% of all cancer-related deaths within 5 years.

— The researchers found that if these patients had been diagnosed at stage III, there would have been 51 fewer cancer-related deaths per 100,000 (or 15% of all cancer-related deaths). If one-third of metastatic cancers were diagnosed at stage III, one-third at stage II, and one-third at stage I, there would be 81 fewer cancer-related deaths per 100,000 (or 24% fewer cancer-related deaths).

Early diagnosis can also reduce the cost of treatment: a study published in 2023 estimated the national cost-savings in the United States from early diagnosis at $26 billion per year[27]. Studies in other industrialised countries find treatment costs for patients diagnosed early in the disease course to be 2 to 4 times less than those diagnosed at later stages. Earlier diagnosis may also reduce the financial impact on the patient and their family given shorter treatment courses, which can allow patients to continue working and therefore incur fewer expenses related to therapies.

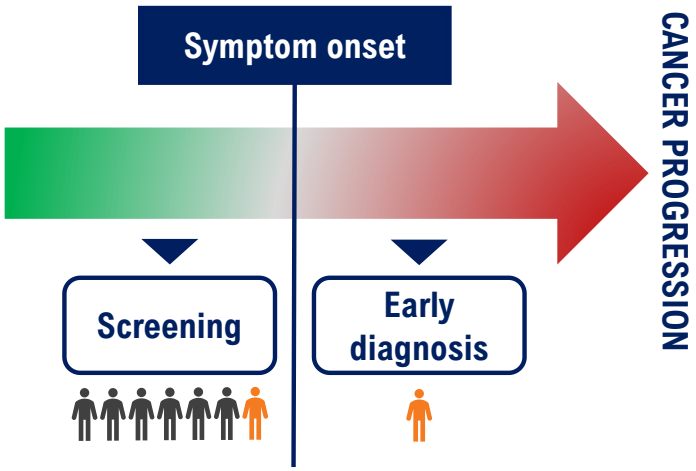


Figure 28. Cancer screenings and early diagnostics in the cancer progression timeline – *Source: elaboration by TEHA, 2024*

[26] Brill JV (2020), «Screening for Cancer: The Economic, Medical, and Psychosocial Issues".
[27] Philipson TJ et al. (2023), "The aggregate value of cancer screenings in the United States: full potential value and value considering adherence".

The health benefits of cancer screenings campaigns

Screening programs provide significant benefits by detecting diseases early, improving treatment outcomes, and reducing mortality rates. Evidence from various studies has highlighted the substantial health benefits of routine screenings for several types of cancer, cardiovascular diseases and other conditions.

A systematic review of breast cancer screening[28] indicates that for women of all ages at average risk, screening is associated with a reduction in breast cancer mortality by approximately 20%. This demonstrates the life-saving potential of early detection through regular mammograms.

Expanding the uptake of cancer screening strategies can lead to remarkable reductions in cancer-related deaths:

— For instance, a 10% increase in screening uptake could yield a 1% reduction in lung cancer deaths, a 21% reduction in colorectal cancer deaths, a 4% reduction in breast cancer deaths, and a 40% reduction in cervical cancer deaths over the lifetimes of individuals newly eligible for screening as of 2021, according to a study conducted in the United States.

Beyond cancer, screening for other conditions also shows significant benefits. One study[29] found that screening for abdominal aortic aneurysms, peripheral artery disease, and possible hypertension led to a 7% relative reduction in all-cause mortality. Another study reported an 11% relative reduction in all-cause mortality for individuals aged 65–69 years through broader, computed tomography-based screenings.

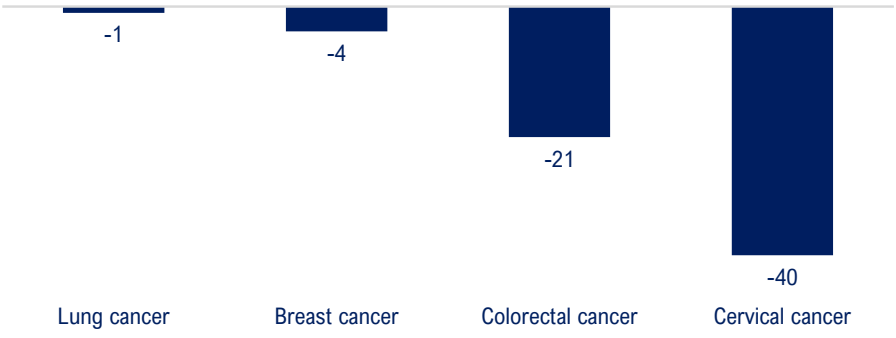


Figure 29. Effects of a 10% increase in screening uptake on the number of deaths for 4 types of cancer (reduction in %), 2021 – *Source: TEHA on Winstead E (2024), "What Happens If More People Get Screened for Cancer?" data, 2024*

[28] Myers ER (2015). «Benefits and Harms of Breast Cancer Screening: A Systematic Review».
[29] Lindholt JS et al. (2021), "Clinical Benefit, Harm, and Cost Effectiveness of Screening Men for Peripheral Artery Disease: A Markov Model Based on the VIVA Trial".

The economic and fiscal benefits of screening campaigns

While screenings require substantial resources in terms of healthcare workers, communication campaigns, and equipment, they nonetheless provide significant economic and fiscal returns to healthcare systems and to the economy.

Screening programs encompass a variety of tests, including cancer screenings (such as mammograms for breast cancer, colonoscopies for colorectal cancer, HPV tests and Pap smears for cervical cancer) and cardiovascular screenings for blood pressure, cholesterol levels, and glucose levels. Additionally, there are screenings for other conditions such as osteoporosis, diabetes, and sexually transmitted infections (STIs).

Cancer screenings can reduce healthcare costs primarily because it costs less to treat diseases in their early stages compared to their advanced stages. Early detection through screenings, when available, allows for timely and less complex treatments, which are generally less expensive and more effective.

This is confirmed by several studies. According to a scientific publication[30] examining the return on investment of cancer screenings in the USA, the savings for the healthcare system and for patients between 1996 – when screenings were first recommended – and 2022 amounts to up to € 9,200 billion. Most of these savings came from cervical cancer screenings, also due to their high adherence rate.

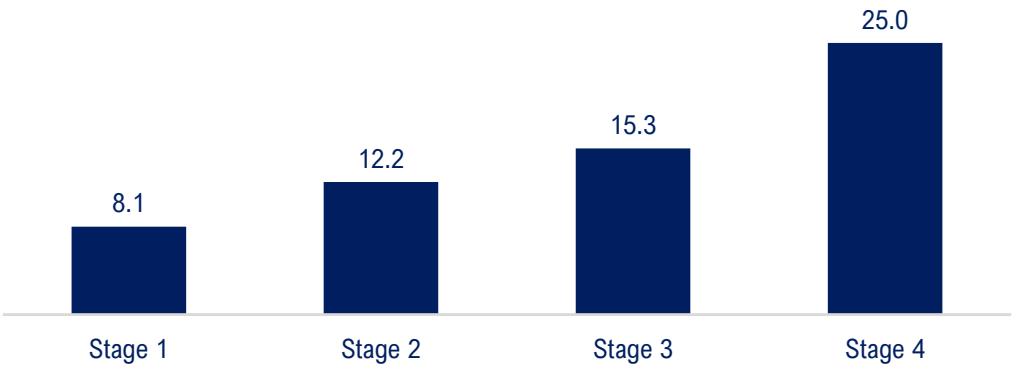


Figure 30. Cost of breast cancer treatment by stage in England (in thousand £), 2023 *– Source: TEHA on Wills L et al. (2023), «Estimating surgery, radiotherapy and systemic anti-cancer therapy treatment costs for cancer patients by stage at diagnosis" data, 2024*

[30] Philipson TJ et al. (2023), "The aggregate value of cancer screenings in the United States: full potential value and value considering adherence".

The health benefits of prevention: Healthy lifestyle

Adopting a healthy lifestyle has profound effects on individual health and longevity. Research indicates that an unhealthy lifestyle is linked to a 78% heightened risk of premature death, independent of genetic predisposition. This finding underscores the critical impact of lifestyle choices on overall health and lifespan.

An analysis[31] carried out with data from 353,742 individuals from the UK Biobank, revealed that those with a high genetic risk of shorter life expectancy have a 21% increased risk of early death compared to those with a low genetic risk. However, a healthy lifestyle has been shown to offset the effects of life-shortening genes by 62%.

The optimal lifestyle combination identified in the study includes four key factors:

1. Not smoking: Avoiding tobacco use drastically reduces the risk of numerous diseases, including cancer, heart disease, and respiratory illnesses.
2. Regular physical activity: Engaging in consistent physical exercise improves cardiovascular health, strengthens muscles and bones, and enhances mental well-being.
3. Adequate sleep: Ensuring sufficient sleep each night supports cognitive function, emotional stability, and overall physical health.
4. Healthy diet: Consuming a balanced and keeping alcohol at a minimum helps maintain a healthy weight and reduces the risk of chronic diseases.

According to the WHO, 60% of factors affecting individual health and quality of life are correlated with lifestyle choices. Long-term studies indicate that a healthy lifestyle can add up to 5 years to an individual's life, highlighting its significant role in enhancing longevity and quality of life.

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Figure 31. Determinants of health and quality of life, 2020 –
Source: TEHA on WHO data, 2024

[31] Oster H et al. (2023), «Effects of Healthy Lifestyles on Chronic Diseases: Diet, Sleep and Exercise".

The economic and fiscal benefits of prevention: Healthy lifestyles

Promoting a healthy lifestyle is crucial for reducing the incidence of high-impact diseases such as cancer and cardiovascular diseases. However, among the three main pillars of preventive healthcare – promoting healthy lifestyles, screenings, and immunisation – healthcare systems play a limited role in the first, as nutrition, physical activity, and alcohol consumption are ultimately individual choices.

— Physical activity is one of the most important factors in maintaining individual health. According to a recent meta-analysis of nine econometric studies, healthcare costs were substantially reduced in physically active groups, ranging from 9.0% to 26.6%. However, these savings could be partially offset by increased healthcare spending due to the longer life expectancy that physical activity guarantees.

— Alcohol consumption is another significant burden on healthcare costs and the wider economy. The associated costs include expenses for treating addiction, direct costs for alcohol-related chronic diseases, and indirect costs related to loss of productivity. According to the OECD[32], the estimated impact of alcohol consumption on health expenditure ranges from just under 1% of total health expenditure in Switzerland to over 7% in France. In terms of the wider economy, total non-healthcare costs range from 0.4% of GDP in Portugal to 1.6% of GDP in Estonia.

— Finally, the burden of smoking is also substantial, costing approximately 2.5% of the region's annual GDP in terms of direct and indirect economic impacts. Europe spends 6.6% of its healthcare budget on smoking-related illnesses, second only to the Americas at 6.7%.

Overall, behavioural factors represent a significant burden on healthcare systems and an important opportunity for fiscal sustainability if countries can improve their populations' lifestyles.

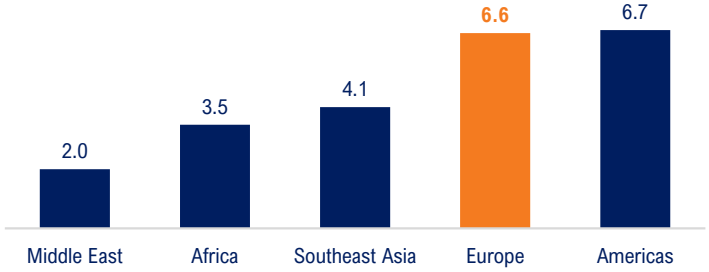

Figure 32. Total health expenditure attributable to smoking-related illnesses (%), 2017 – *Source: TEHA on Goodchild M et al. (2017), "Global economic cost of smoking-attributable diseases", 2024*

[32] OECD (2021), "Preventing Harmful Alcohol Use".

The health, economic and societal impacts of prevention: the case of immunisation strategies

Immunisation stands as a remarkable testament to the power of prevention, offering far-reaching and multifaceted benefits across various aspects of society with one solution. The profound impact of vaccination programs extends well beyond the immediate prevention of infectious diseases, touching upon health, social, and economic spheres in ways that few other public health measures can match.

The effectiveness of immunisation lies in its ability to simultaneously address multiple societal challenges through a single, cost-effective action. By preventing diseases, vaccines not only save lives and improve individual health outcomes but also contribute to the overall well-being of communities and nations. This ripple effect of positive impacts is what positions immunisation as an exceptionally valuable public health tool.

From reducing the burden on healthcare systems and curbing the spread of AMR to fostering economic growth through a healthier workforce and decreased healthcare expenditures, immunisation plays a key role in our societies. It also protects vulnerable populations and enhances a society's resilience against potential pandemics and other health crises.

The interconnected nature of these benefits underscores the unique position of immunisation as a cornerstone of public health strategy. In an era where complex global challenges demand innovative solutions, the ability of immunisation to deliver wide-ranging positive outcomes with relatively simple implementation is paramount.

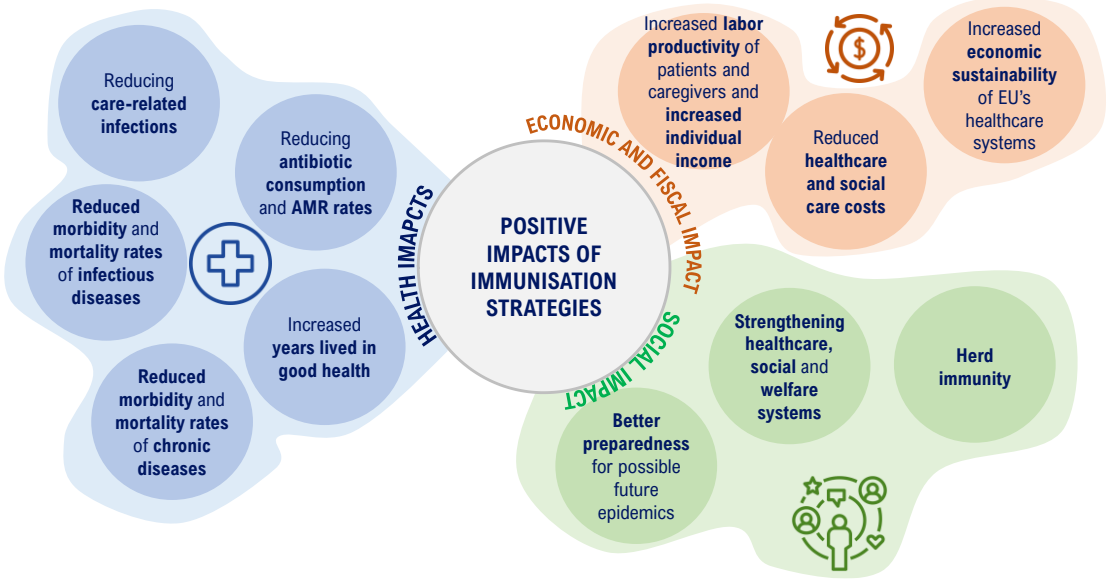

Figure 33. Positive impacts of immunisation strategies – *Source: elaboration by TEHA, 2024*

Vaccine fatigue is gaining ground just as the immunisation offer for adults is expanding significantly

The landscape of immunisation has undergone a significant transformation, with vaccination for adults now becoming as comprehensive as those for children, encompassing the entire life course. Among Vaccines Europe members, 83 of the 115 vaccines under development are for adults. This approach is particularly important for supporting the EU's ageing population through various life stages.

However, this expansion of vaccination availability coincides with a concerning trend: growing vaccine fatigue and a lack of awareness on the value of immunisation beyond childhood. Despite the boost in vaccine confidence during the pandemic, public perception of the importance of immunisation has significantly declined. In 2022, only 81.5% of the EU population believed that immunisation is important, a notable drop from pre-pandemic levels of 89.6% in 2018[33].

Poland is the only EU country where confidence in the importance of vaccination has improved, showing a 4.9% increase. In stark contrast, six EU Member States have seen a decline of over 20% in the percentage of their populations that believe immunisation is important. This alarming trend highlights the urgent need for renewed and sustained efforts in public health communication and education to combat vaccine fatigue and reinforce the role of immunisation in protecting public health.

By reinforcing the importance of immunisation throughout the life course and addressing the underlying causes of vaccine fatigue, public health authorities can work towards restoring confidence in vaccination programs and ensuring the health and well-being of the population.

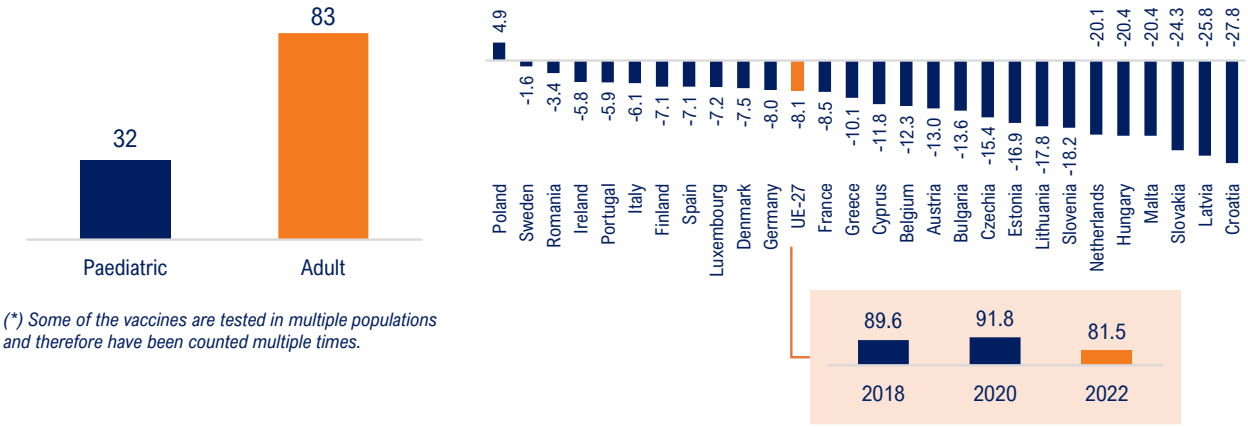

Figure 34. On the left: Vaccine pipeline of Vaccines Europe members* (number), 2023. On the right: Variation in people who believe immunisation is important (% of population), 2022 vs. 2018 – *Source: TEHA on European Commission and «Vaccines Europe Pipeline Review 2023» data, 2024*

[33] European Commission, 2024.

The health benefits of prevention: Immunisation

Vaccination has made an enormous contribution to global health, transforming the landscape of infectious diseases. Historical achievements include the eradication of smallpox and rinderpest and the near-eradication of polio. Since the inception of WHO's Expanded Programme of Immunisation (EPI) in 1974 and the Global Alliance for Vaccination and Immunisation (GAVI) in 2000, global vaccination coverage has dramatically increased. Vaccination programs have led to significant declines in the impact of diseases such as tetanus, hepatitis A and B, measles, and diphtheria both in Europe and worldwide.

A landmark study[34] to be published by The Lancet found that global immunisation efforts have saved an estimated 154 million people over the past 50 years, equivalent to 6 people every minute, most of which were children (101 million). The study, led by the WHO, shows that immunisation is the single greatest contribution of any health intervention to ensuring the health of children and adults, drastically reducing childhood mortality and disease incidence. The measles vaccine alone accounted for 60% of the lives saved due to immunisation, underscoring its critical impact.

The importance of immunisation is also evident from the burden of non-vaccination. In Europe, despite being one of the areas with the highest rates of immunisation worldwide, 2021 saw 43,753 deaths from vaccine-preventable diseases such as cervical cancer, tuberculosis, and meningitis. Despite progress since 1990 (75.086 deaths) the burden on the health of the European population remains substantial and is a source of health disparities among EU member states.

Recently, on 21 June 2024, the Council of the European Union issued a recommendation[35] to Member States urging them to improve the immunisation coverage against HPV and HBV, recognising the value that vaccines carry also in terms of prevention and potential elimination of some chronic diseases.

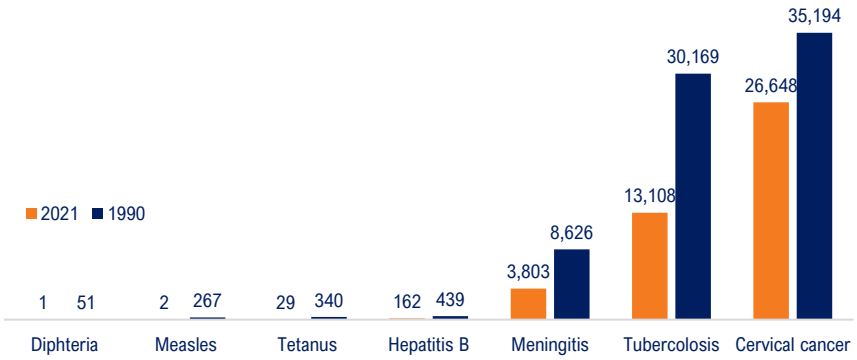

Figure 35. Deaths from vaccine-preventable diseases in Europe (number), 1990 and 2021 *– Source: TEHA on WHO data, 2024*

[34] Shattock AJ et al. (2024), "Contribution of vaccination to improved survival and health: modelling 50 years of the Expanded Programme on Immunization".
[35] Recommendation (C/2024/4259).

The public health impact of paediatric immunisation programs is substantial. In Belgium, the paediatric immunisation program prevented 226,000 cases of infections and 200 deaths over the lifetime of a birth cohort of 118,000 children. This resulted in saving 7,000 life-years and 8,000 quality-adjusted life-years (QALYs).

Similarly, Poland's paediatric immunisation program prevented more than 452,300 cases of disease, 1,600 deaths, 37,900 life-years lost, and 38,800 QALYs lost, with a vaccination program whose costs amount to just €54 million in 2020-2022. This resulted in an investment equal to only € 33,750 for every life saved.

Adult vaccination also yields significant health benefits, particularly in older populations. Influenza vaccination, for instance, has a notable impact on health outcomes. For a birth cohort of 4 million people, about 275,000 QALYs would be saved if influenza vaccination were offered annually to all individuals after age 50. A substantial portion of these benefits—80% or 220,000 QALYs—would be achieved by targeting those aged 65 and older, underscoring the importance of immunisation among the older cohorts of the population.

According to another study[36], the impact of immunisation programs from 1900 to 2015 on ten vaccine-preventable diseases in Italy showed a significant reduction in disease incidence. The introduction of vaccines and their universal recommendation led to much lower incidence rates than those forecasted without vaccination. Over 4 million cases were prevented, with 65% of these among adults. Diphtheria, mumps, chickenpox, and measles were the diseases with the highest number of prevented cases.

In addition to benefits in terms of infectious diseases, immunisation has also been shown to have contributed to the prevention of cardiovascular diseases. For example, a reduced risk of cardiovascular events for 65+ years old individuals older was associated with pneumococcal vaccination.

Further health benefits of immunisation include their value in combating antimicrobial resistance (AMR) by preventing infections that would otherwise require antibiotic treatment, thus reducing the misuse and overuse of antibiotics. Influenza vaccination, for example, has been demonstrated to reduce use of antibiotics by as much as 64% in vaccinated individuals

According to WHO/Europe, COVID-19 vaccines have saved an estimated 1.4 million lives in Europe, with a reduction in mortality spanning between a 48% reduction for those aged 25-49 years old to a 62% reduction for over-80s.

[36] Pezzotti P (2018), «The impact of immunisation programs on 10 vaccine preventable diseases in Italy: 1900-2015".

Immunisation holds a social value that goes beyond individuals' health and impacts on the community at large

Immunisation holds significant social value that extends beyond individual health benefits, impacting broader societal well-being.

By preventing the spread of infectious diseases, immunisation plays a crucial role in strengthening healthcare, social, and welfare systems. It reduces the incidence of illnesses that would otherwise place substantial strain on healthcare resources (e.g. Covid-19 caused significant delays in treatment for cancer patients), thereby enabling these systems to function more efficiently and sustainably.

One of the most critical social benefits of immunisation is the provision of herd immunity. When a substantial portion of the population is vaccinated, the spread of contagious diseases is curtailed, protecting those who are unable to receive vaccines due to medical conditions or age. This communal protection is vital in safeguarding vulnerable groups and maintaining public health.

Furthermore, immunisation enhances societal preparedness for potential future epidemics, making communities are better equipped to prevent outbreaks of both well-known and emerging infectious diseases.

In terms of social equity, immunisation plays a vital role in creating a level playing field across different socio-economic groups, although in some cases healthcare systems may find it harder to reach more disadvantaged groups in vaccination campaigns. By preventing the onset and development of diseases, immunisation ensures that all are equally protected from illness. This transcends social barriers, providing uniform health benefits and contributing to a more equitable society.

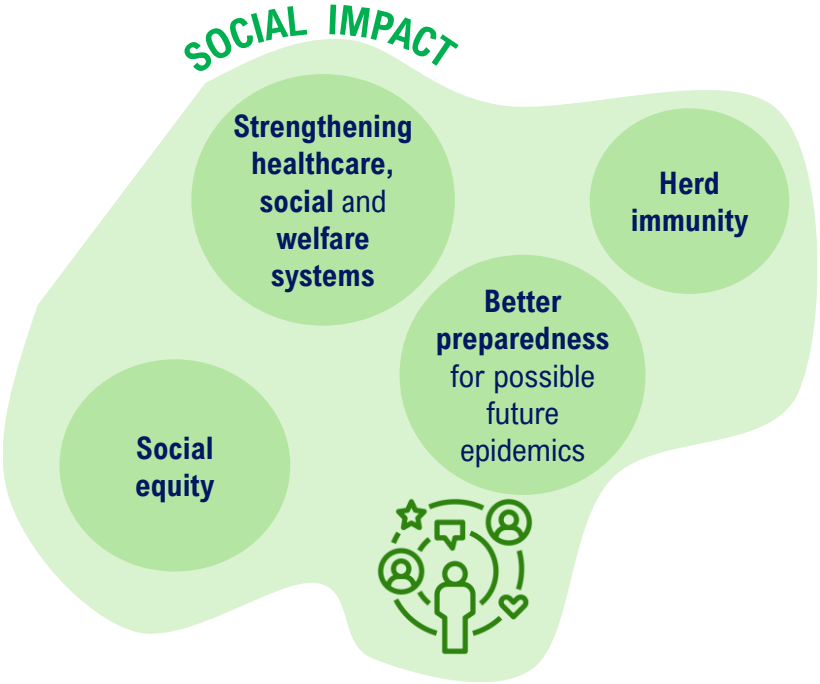

Figure 36. Social impact of immunisation (illustrative) – *Source: elaboration by TEHA, 2024*

The economic and fiscal benefits of prevention: Immunisation

Immunisation is a cornerstone of prevention programs, not only because of its health benefits but also due to its significant economic and fiscal advantages. By preventing a wide range of infectious diseases, immunisation reduces healthcare costs, lowers the burden on healthcare systems, and contributes to a healthier, more productive workforce. Despite the evident benefits, there remains a critical need for further investments in immunisation, as highlighted by the high number of deaths from vaccine-preventable diseases and by the increasing resources needed by healthcare systems.

The economic benefits of immunisation are well-documented and substantial. There is a vast academic literature attempting to calculate the return on investment of vaccination programs, which is found to be large in positive in the majority of cases.

A comprehensive review of the return on investment of public health interventions[37] conducted in 2017 found that the highest cost-benefits ratio (CBR) was obtained by an immunisation program, in particular the Australian measles vaccinations in the 1980s and 1990s, which achieved a CBR of 167:1, a result that highlights the groundbreaking economic and fiscal return to immunisation.

According to the same study, flu vaccinations also have a large positive return on investment. In some cases, the return – compared to the investment needed for the immunisation program – can reach up to 174 the invested value.

Other immunisation programs throughout the world have also been characterised by high returns on investment, including Hepatitis B vaccinations in Italy, MMR vaccinations and hospital-based post-partum vaccinations in the USA.

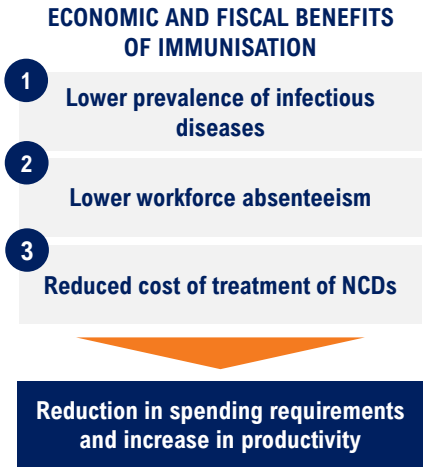

Figure 37. Economic and fiscal benefits of immunisation (illustrative) – *Source: elaboration by TEHA, 2024*

[37] Masters R et al. (2017), «Return on investment of public health interventions: a systematic review".

Another cost-benefit analysis conducted in 2019 on US data[38] indicates that every dollar spent on childhood vaccination generates $3 of savings for the healthcare system and $10 from a broader societal perspective.

A recent report[39] published in 2024 highlighted how, across 10 European countries, four adult immunisation programs produce benefits likely large enough to offset their costs and generally outweigh them many times over. Across all countries and disease programs, these programs return 19 times their initial investment when monetising the full spectrum of benefits using the most common valuation approach as applicable to each program, and up to 33 times in the case of anti-pneumococcal vaccination. This is the equivalent of billions of dollars in net monetary benefits to society and corresponds to about $4,637 for one individual's full vaccination course.

In terms of the economic cost of missed immunisation, a recent study found that in 2021, a substantial number of adolescents in Italy were not vaccinated against HPV. This shortfall, compared to the 95% vaccination target set by the Italian National Immunisation Plan (NIP), leaves between 1.1 and 1.3 million young adolescents unprotected against HPV-related diseases over their lifetimes. The economic impact of this gap is significant, with expected lifetime healthcare costs exceeding €905 million. Achieving the optimal 95% vaccination coverage rate could have reduced these costs by €529 million, even after accounting for the expenses of the vaccination program.

Focusing on adult immunisation, an extensive review[40] covering 78 publications found that despite adult vaccination having a similar profile in terms of cost-effectiveness compared to other preventive services such as hypertension screening and cancer screening, the latter are often given greater priority during clinical practice.

Figure 38. Return on investment of immunisation – *Source: TEHA on Steuten, H. E. B. et al. (2024), «Socio-Economic Value of Adult Immunisation Programmes» , 2024*

[38] Mondher Toumi and Walter Ricciardi, "The Economic Value of Vaccination: Why Prevention is Wealth".
[39] Steuten, H. E. B., et al. (2024), "Socio-Economic Value of Adult Immunisation Programmes".
[40] Leidner AJ (2019), «Cost-effectiveness of adult vaccinations: A systematic review" .

Adult immunisation also provides significant economic benefits in light of the ageing workforce. Between 2004 and 2019, the proportion of people aged 55 years and older among the overall employed population in the EU-27 increased from 12% to 20%. By preventing illness and hospitalisation – which reduces the probability of remaining at work by 8.4% for women and 6.5% for men – immunisation can contribute to maintaining the workforce healthy and productive.

Also, in the last winter season, the collision of respiratory viruses (RSV, flu and COVID-19), also known as the "tripledemic", has resulted in overcrowded hospitals and emergency departments and overwhelmed healthcare systems. The possibility of immunisation thanks to the availability of vaccines may contribute to reducing the pressure on EU's healthcare systems in the next winter season, with important impacts on the health and well-being of the population, especially vulnerable populations (older, those with underlying health conditions and pregnant women, who are at a higher risk of developing severe cases of these respiratory infections).

Immunisation benefits sustainability not only because of avoided healthcare costs but also because of the additional tax revenue that productive workers produce when they do not get ill. Every euro invested in adult vaccination (starting at age 50) yields €4 of future economic revenue over the remaining lifetime of the cohort[41], thus producing a significant benefit to public finances.

The academic literature unequivocally demonstrates that the economic and fiscal benefits of immunisation are substantial. These benefits not only reduce healthcare costs but also alleviate the financial strain on European healthcare, social care, and welfare systems, thereby enhancing their economic sustainability. These benefits arise from a multi-layer effect that immunisation programs produce:

they significantly lower the incidence of infectious diseases, reduce long-term healthcare expenditures, and increase productivity by preventing illness-related work absences.

However, despite the clear evidence of these benefits, they are not yet fully understood by the public and by policymakers. The perception of immunisation's value remains limited, which hinders the adoption of a more prevention-focused approach to healthcare. Addressing this gap in understanding is crucial for realising the full potential of immunisation programs. Enhanced communication and education efforts are needed to convey the extensive economic and fiscal advantages of immunisation, thereby supporting the necessary paradigm shift towards preventive healthcare in European countries.

[41] Supporting Active Ageing Through Immunisation (SAATI) Partnership (2018). "Adult vaccination: a key component of healthy ageing".

CONCLUSIONS

The European economy is currently at a challenging juncture. Since the global financial crisis of 2007-08 and the sovereign debt crisis of 2010-11, the European economy, despite variations across EU Member States, has grown at a slower pace compared to other major global economies like the USA and China, with productivity growth also stagnating. Additionally, the European population is ageing rapidly, posing new challenges such as a shrinking labour force and increased demands on health and welfare systems. At the same time, Europe is particularly vulnerable to climate change, both economically and in terms of public health.

This situation is further exacerbated by the threats to the fundamental factors that have supported Europe's growth model over the past three decades, including open international markets, low energy prices, and defence expenditure covered by the USA. The new geopolitical landscape necessitates a rethinking of the EU economic model and a deepening of EU integration, particularly in energy and financial markets.

Reforming the traditional growth model will require significant investments in areas such as digital and green transitions, defence, and industrial policy. Many EU Member States may struggle to meet these investment needs due to high levels of public debt, which have increased in recent years to combat the pandemic and the surge in energy prices following the war in Ukraine.

On a positive note, the EU has demonstrated growing awareness of these issues. The “New Economic Governance Framework,” approved in April 2024, attempts to balance the need for controlling public finances and reducing debt-to-GDP ratios with the necessity of maintaining and incentivising future-oriented investments. This approach reflects lessons learned from the financial and sovereign debt crises, where simultaneous budget consolidations across many countries led to a reduction in public investment and growth-enhancing expenditure, ultimately hindering economic and productivity growth throughout Europe.

The key to this paradigm shift lies in a new understanding of “investment” introduced in the reformed regulations. Unlike the traditional “accounting” notion of investment, the new approach defines investment (“growth-enhancing expenditure”) in “economic” terms—as an expense today that can reduce future costs and boost future growth.

This redefinition has significant implications for healthcare spending, especially in the realm of preventive healthcare. The pandemic experience has heightened the demand for adequate healthcare among European citizens and underscored the importance of investing in healthcare now to address future challenges, particularly those arising from an ageing population.

As demonstrated in earlier chapters, prevention not only improves health outcomes but also increases income and production while reducing the future economic burden on healthcare, social, and welfare systems. Given tighter budget constraints, the "New Economic Governance Framework" presents an opportunity to classify investments in healthcare—particularly in prevention and immunisation—as "social security investments," similar to investments in defence and the digital and green transitions. As EU Member States prepare their National Medium-term Fiscal Structural Plans under the new reform, there is an opportunity to discuss and consider this paradigm shift in defining "investments in health prevention".

This paper has aimed to contribute to this paradigm shift in two significant ways:

— First, it has provided a detailed analysis of the new economic governance framework, demonstrating that the new legislative language supports a revised interpretation of spending on health prevention;

— Second, it has offered concrete examples of how additional expenditure on health prevention can be justified within this new framework.

The needed paradigm shift in healthcare

Given the increasing health challenges, a comprehensive overhaul of Europe's healthcare systems is essential. The current reactive healthcare frameworks are insufficient in addressing the rising demand and inflationary costs. Therefore, it is imperative to move towards a model that is more sustainable, resilient, and centred around the needs of the citizens.

The European Commission has recognised that the healthcare challenges and growing health disparities necessitate an urgent and transformative approach to enhance healthcare capacity and capability.

This is a critical moment for European nations, both individually and collectively, to rethink the operational models of their healthcare systems. Adopting a more resilient, inclusive, and innovative approach that prioritises the well-being of citizens is essential.

This shift involves moving away from the existing reactive and treatment-focused system towards one that emphasises proactive health promotion, prevention, and the effective management of symptoms.

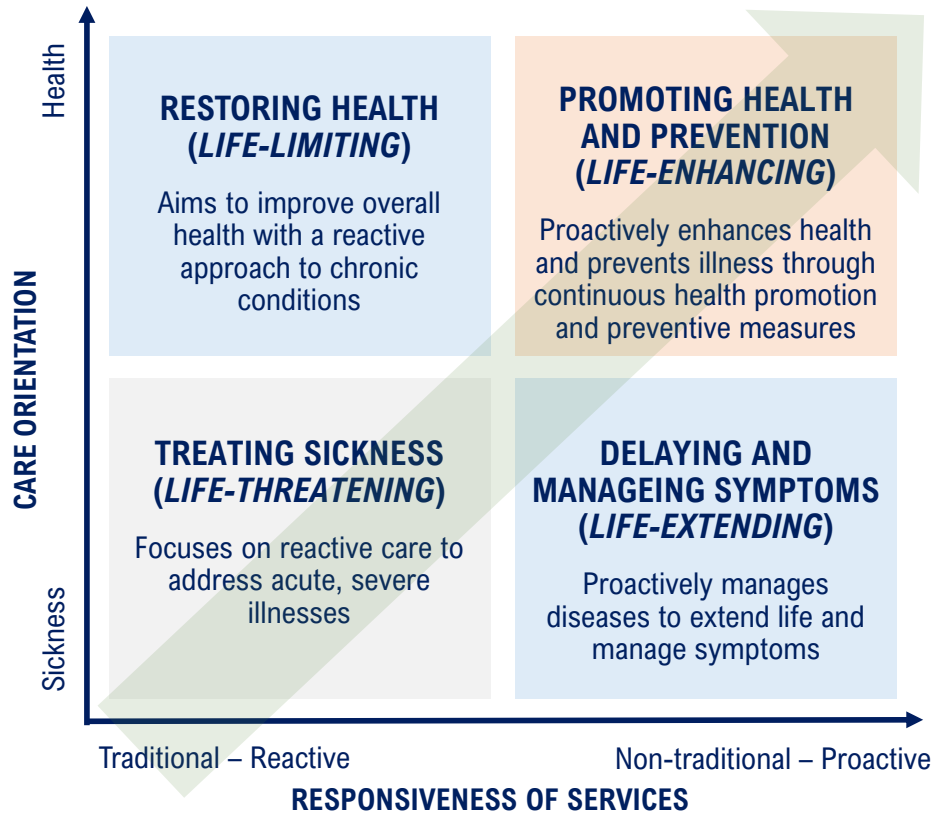

Figure 39. Approaches to healthcare (illustrative) – *Source: elaboration by TEHA, 2024*

POLICY RECOMMENDATIONS

As European Union Member States (MSs) prepare to submit their National Medium-Term Fiscal-Structural Plans to the European Commission by September 20th, 2024, there is a critical window of opportunity to prioritise investments in health prevention.

The New Economic Governance Framework emphasises economic and social resilience as a priority investment area, offering Member States greater flexibility to invest in prevention programs.

In the future, spending in preventive healthcare can be considered an "investment", since it entails potentially higher growth and reduce future expenditure. In particular:

- In the short term, it is necessary for investments in prevention to be recognised as beneficial for long-term fiscal sustainability and granted a greater degree of flexibility within the Member States' fiscal-structural plans.
- In the medium/long term, new revised fiscal rules should exclude prevention and immunisation investments from the calculations of Member States' deficit or debt levels when assessing compliance with fiscal rules.

This will ensure an adequate level of investment in an amount sufficient to reduce the long-term economic burden on healthcare, social care, and welfare systems, which would otherwise go towards an increasing risk of becoming insolvent. Member States must seize this moment to advocate for and implement these changes within their fiscal plans. By doing so, they can enhance public health outcomes, promote economic and social resilience, and ensure the long-term sustainability of their healthcare, social care and welfare systems.

Figure 40. Short-term and medium/long-term policy recommendations – *Source: elaboration by TEHA, 2024*

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