



Healthcare as an Investment

Report of the Healthcare Committee of the American Chamber of Commerce in Romania

November 2022

Prepared by IQVIA Romania

Table of Content

+ Intro and objectives of the report	2
+ Importance of investment in healthcare	5
+ Policy Efficiency	16
+ 1 Prevention	18
+ 2 Screening	21
+ 3 Innovation in healthcare	28
+ 4 Patient adherence	32
+ 5 Value-based healthcare	37
+ Cost optimization potential & smart spending in healthcare	42
+ 1 Medical Infrastructure	44
+ 2 Loss of exclusivity potential and horizon scanning of innovative medicines	59
+ 3 Technology driven cost effectiveness	62
+ 4 Digitalization possibilities in healthcare and cost-savings potential	65
+ Optimized funding models	70
+ 1 Systemic Change	72
+ 2 Innovation funds	74
+ 3 EU funds	78
+ 4 Alternative funding models	80
+ Role of the industry as key contributor	83
+ Call to actions	89

Intro and objectives of the report

The report aims to assess the current state of the HC system in Romania and illustrate the long-term benefits of its optimization

Background

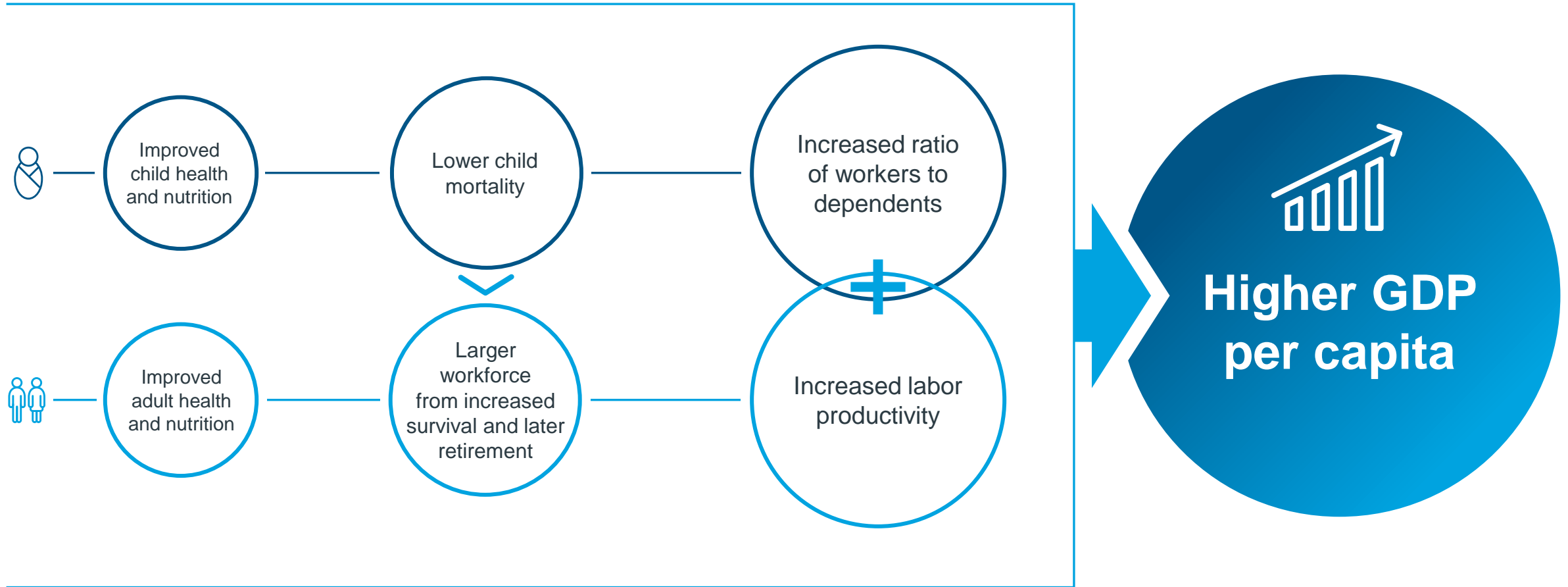


Investment in Healthcare needs to be on the **strategic agenda** of every government to put necessary **focus on people's health** and has become an absolute necessity to ensure long-term and sustainable economic growth

The impact of delayed or insufficient investment in healthcare results in indirect increases in Healthcare costs, as well as **long-term decrease in labor productivity and GDP output**

Investment in Healthcare has become an absolute necessity to ensure long-term and sustainable economic growth

Background

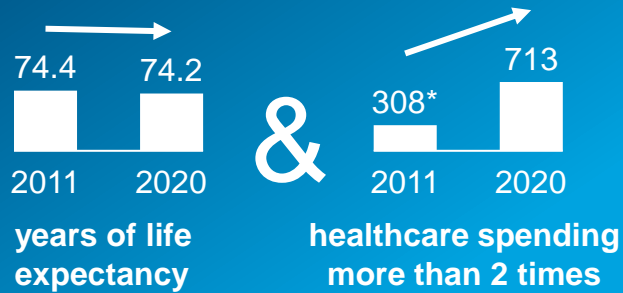


Importance of investment in healthcare

Despite a significant progress, the Romanian healthcare system still needs an updated comprehensive investment strategy

Summary

The Romanian healthcare system has experienced **notable progress** in the last decade



However, Romania is currently caught up in a **vicious circle** of



Worsening demographic trends

- Ageing population: **4y avg age increase** in a decade
- Growing old age dependency ratio: **26% increase** from 2010
- Suffering working population



Healthcare spending

- Growing healthcare needs
- Second lowest healthcare spending per capita across EU: **€661 (RO) vs. €3,104 (EU)** in 2019
- Rising pressure on the system



Poor scoring compared to EU average on

- Life expectancy: **73y (RO) vs. 80y (EU)**
- Amenable mortality (per 100k): **208 (RO) vs. 92 (EU)**
- Infant mortality (per 1,000): **5.6 (RO) vs. 3.3 (EU)**
- Access to healthcare, diagnostics and treatment



Healthcare system

Very **hospital-centric system** with relatively high spending on hospitals with primary care being underutilized.

*EUR PPP per capita

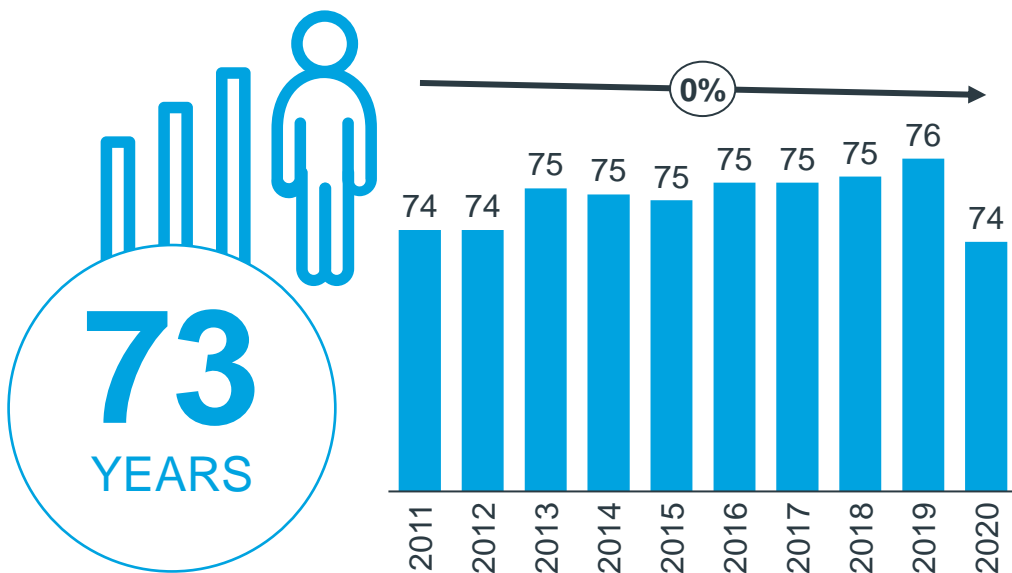


In order to reverse the pattern, we need structural changes – increased investments in healthcare, coupled with comprehensive strategies to target these investments to the areas that have the highest impact

Covid-19 has brought back down the life expectancy to 2009 levels but spending for healthcare per capita continues to grow

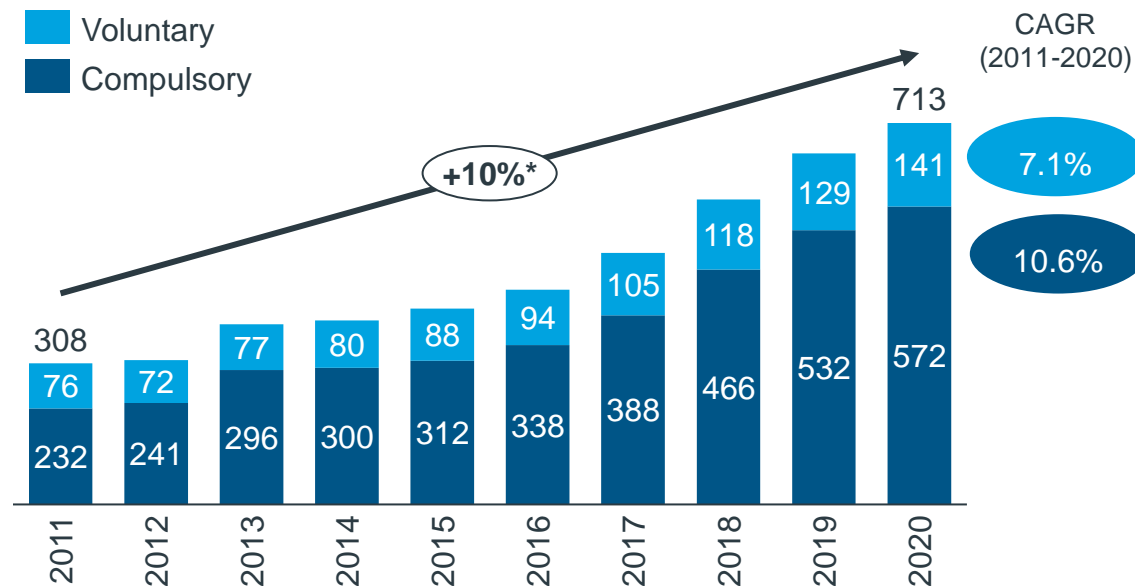
Life expectancy and healthcare spending in Romania

Life expectancy at birth, years



Life expectancy at birth was 74 years in 2010, and increased to 76 in 2019 but recorded a decline in 2020, driven by Covid-19

Per capita spending for healthcare (EUR PPP)



Total spending for healthcare per capita increased substantially in the last years driven more by compulsory government spend

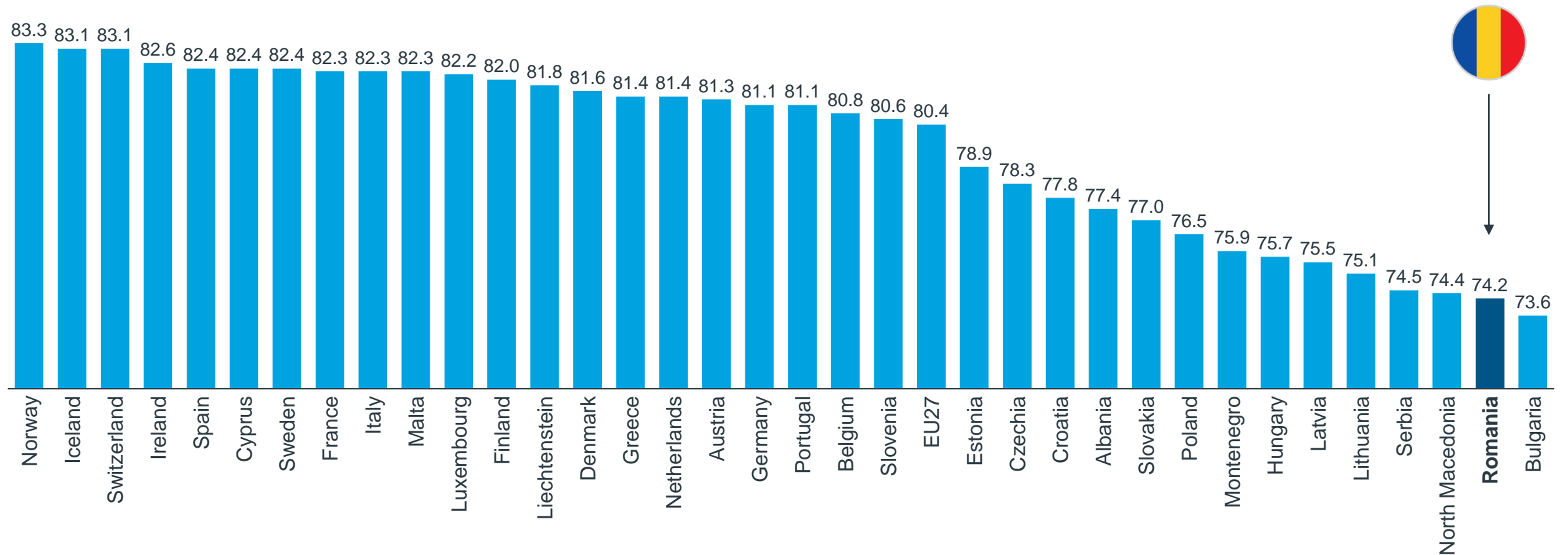
*Compound growth rate

Source: The World Bank, World Development Indicators; OECD

However, there is still catching-up to do with the rest of the EU in terms of health outcomes and thus life expectancy

Life expectancy in the RO vs EU

Life expectancy at birth, years, 2020

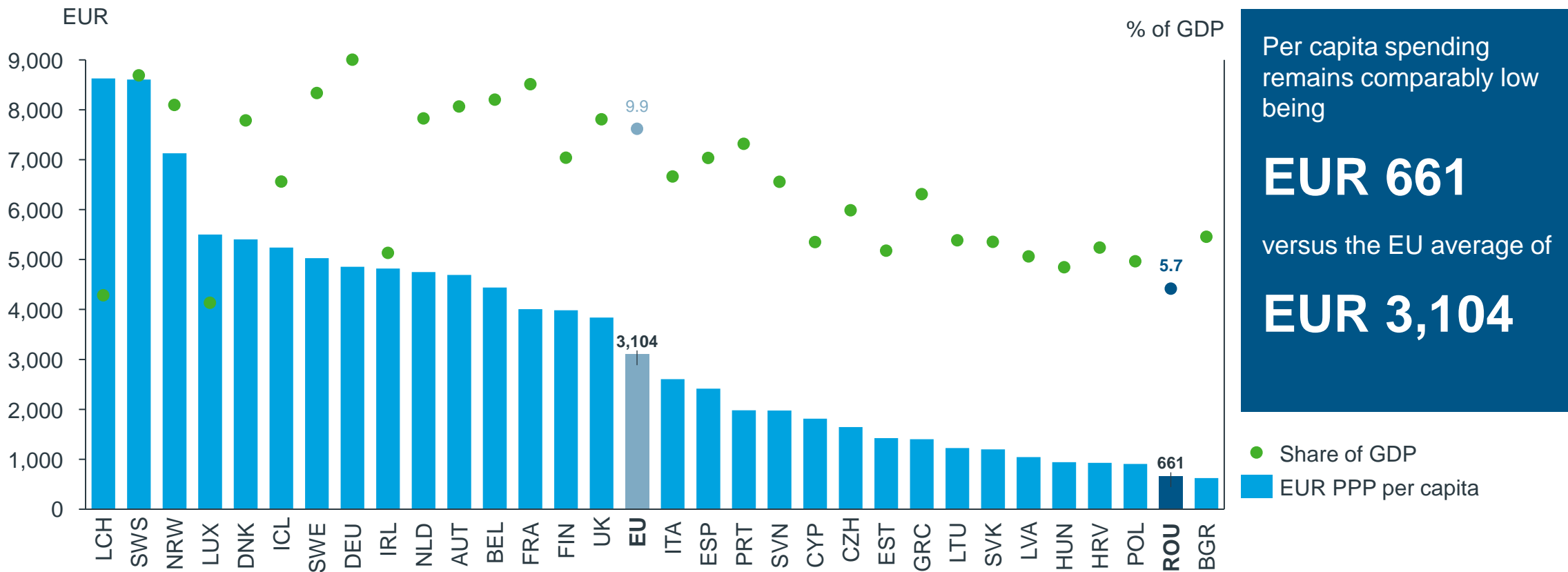


Source: Eurostat
Healthcare as an Investment

To do this catch-up, additional investment in healthcare is necessary to reach at least average EU levels

Healthcare spending in RO vs EU (1/2)

Per capita spending for healthcare (EUR PPP) and % of GDP, 2019



Per capita spending remains comparably low being

EUR 661

versus the EU average of

EUR 3,104

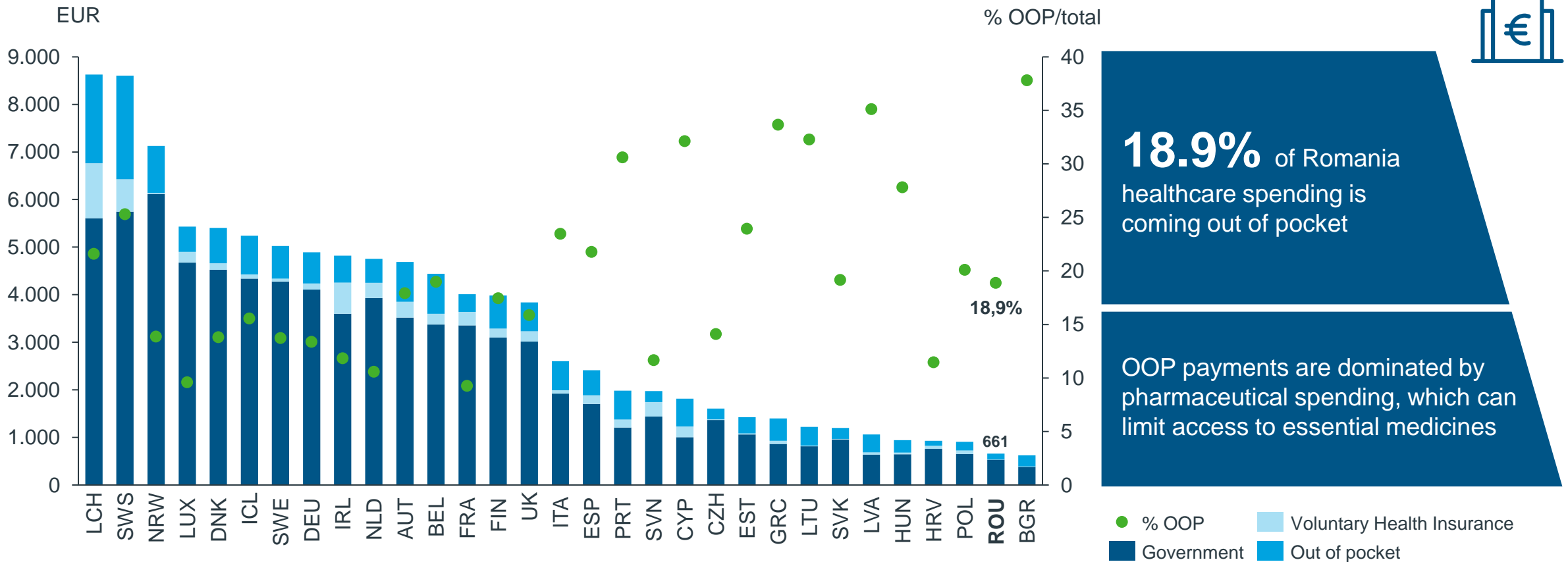
● Share of GDP
 ■ EUR PPP per capita

Source: Eurostat
 Healthcare as an Investment

... and there is limited room for filling that gap through further out-of-pocket payments

Healthcare spending in RO vs EU(2/2)

Per capita spending for healthcare (EUR PPP) and % OOP in total spending, 2019



18.9% of Romania healthcare spending is coming out of pocket

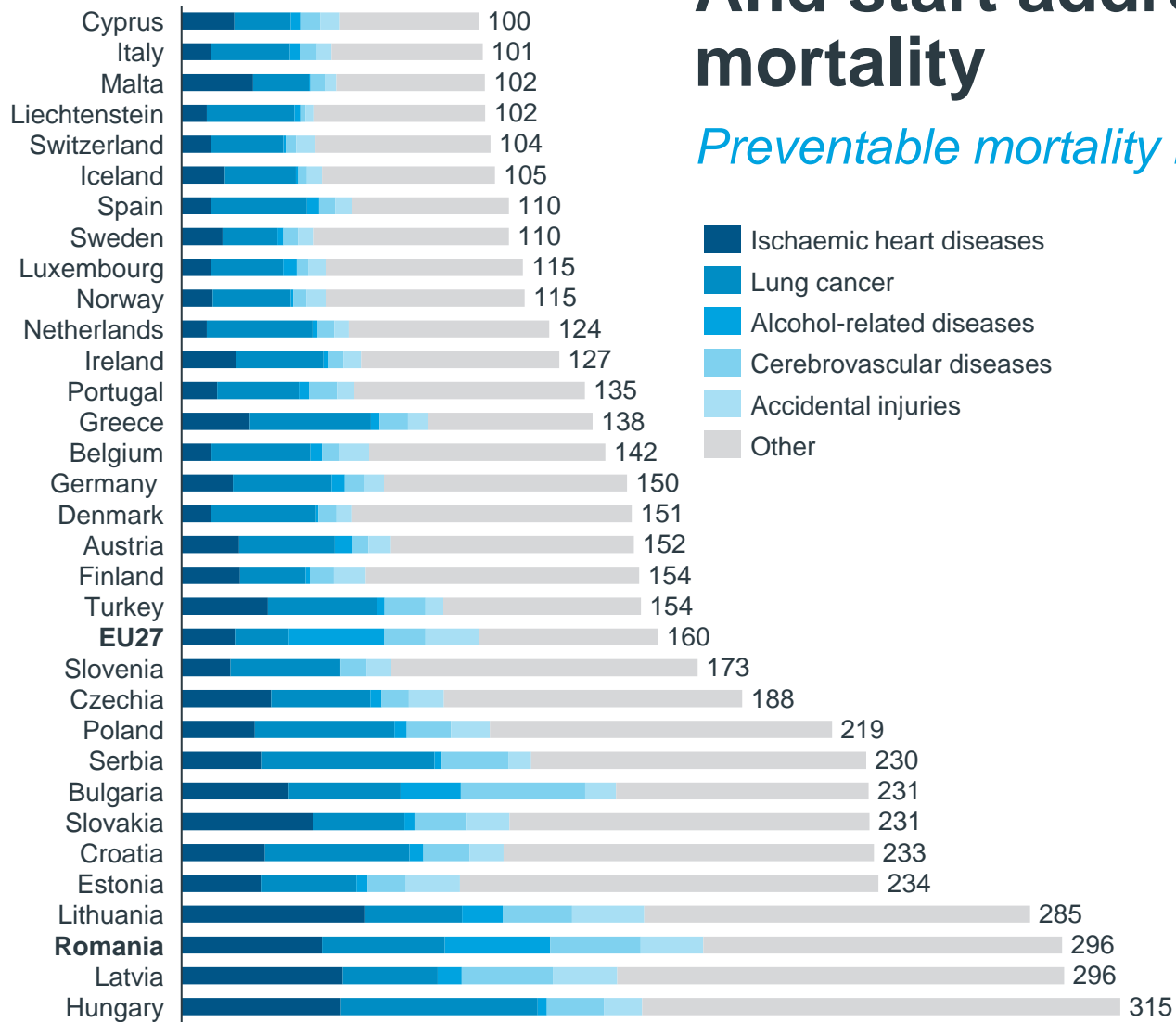
OOP payments are dominated by pharmaceutical spending, which can limit access to essential medicines



Source: Eurostat
Healthcare as an Investment

And start addressing the high preventable mortality

Preventable mortality in RO vs EU



- The rate of preventable mortality was the third highest in the EU in 2019 pointing to the need to improve health promotion and disease prevention
- The main causes of preventable mortality are **ischaemic heart disease, lung cancer and alcohol-related diseases**

At 10%, lung cancer survival
Is still below
EU average of 15%

Preventable mortality per 100,000 inhabitants and main causes of preventable mortality*, 2019**

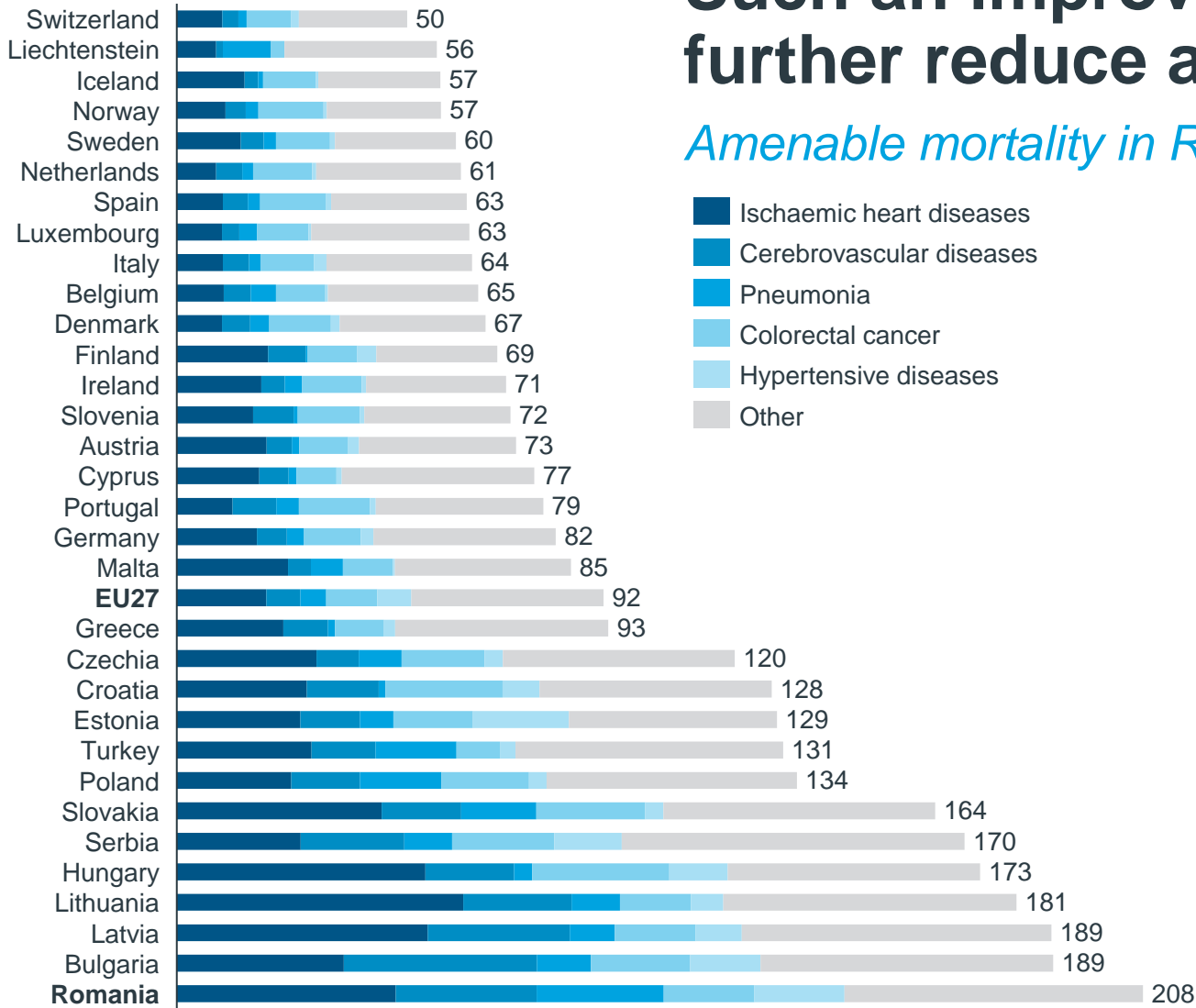
*Preventable mortality is defined as death that can be mainly avoided through public health and primary prevention interventions

** Or latest available

Source: Eurostat, OECD

Such an improvement will help Romania further reduce amenable mortality rates

Amenable mortality in RO vs EU*



- Despite the increasing spending on healthcare, amenable mortality is the highest across European countries
- Major deficiencies in the health system’s ability to provide appropriate and timely treatment to the population are shown by the high rates of treatable mortality due to **ischemic heart disease, stroke, pneumonia and colorectal cancer and hypertensive disease**

Ischemic heart disease
2 times
greater than the
EU average

Amenable mortality per 100,000 inhabitants and main causes of amenable mortality* 2019**

*Amenable mortality is defined as death that can be mainly avoided through health care interventions, including screening and treatment. ** Or latest available
Source: Eurostat, OECD

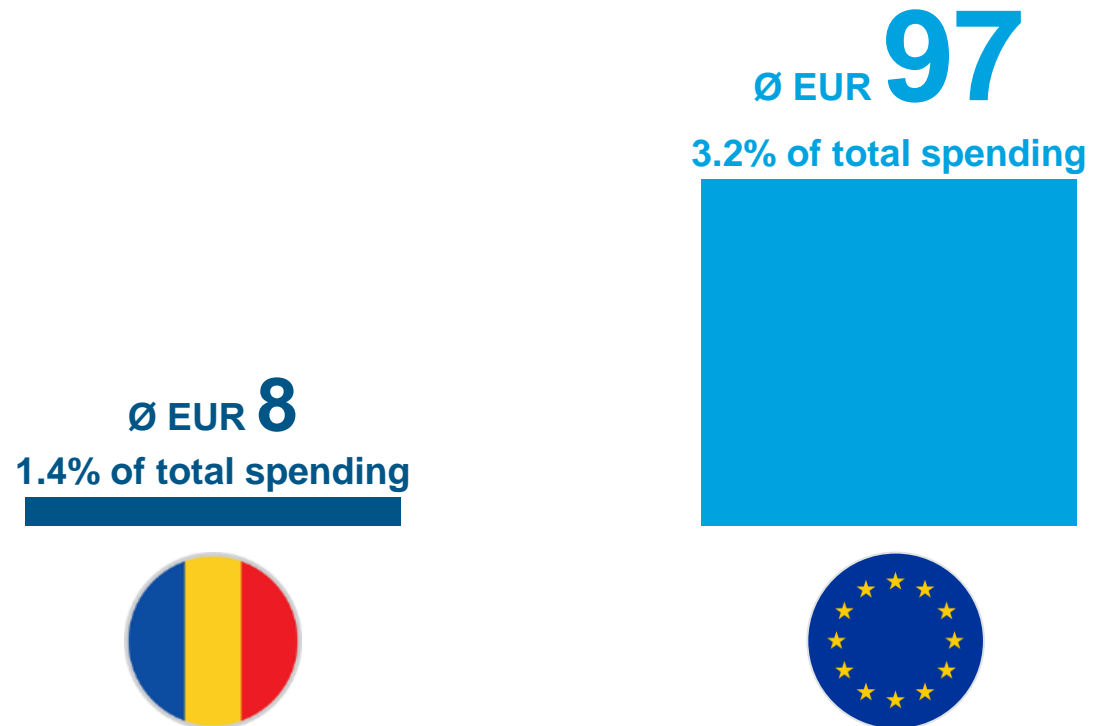
While prevention plays a major role, it remains underdeveloped within the local healthcare system and investment strategy

Spending on prevention in RO vs EU

A substantial proportion of **deaths could be prevented** by tackling behavioral risk factors and strengthening primary prevention

- Improvements in cardiovascular diseases (CVD) prevention and treatment are possible and could have a large impact on population health
- In 2018, new screening programmes were introduced for cancer, CVD and tuberculosis, but the frequency of preventive check-ups remains low

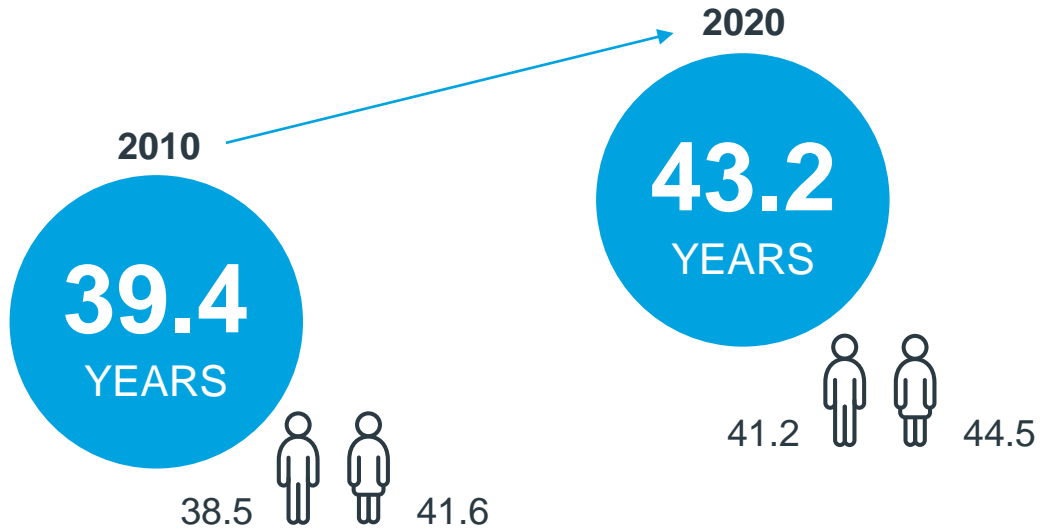
Average yearly spending on prevention per capita, 2020



Early age prevention is even more important in the context of an ageing population to contain economic losses

Ageing population

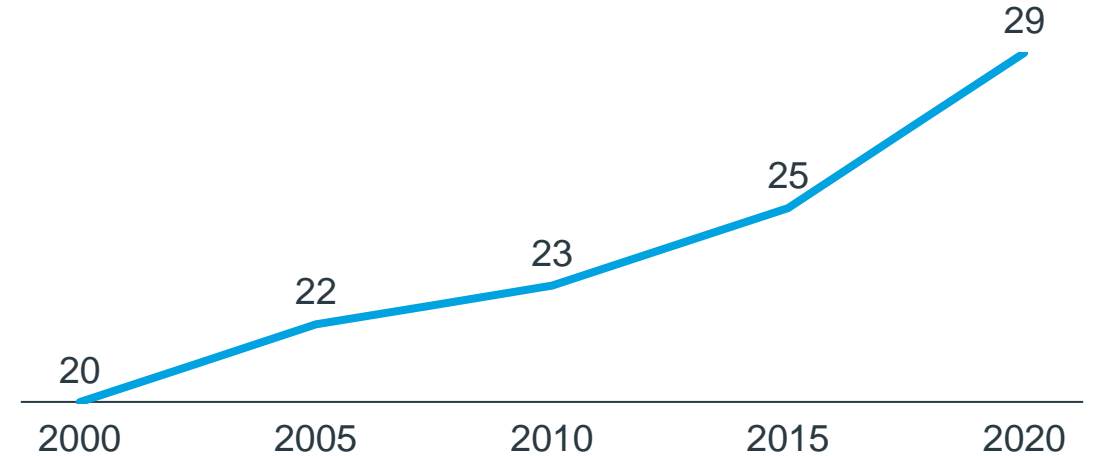
Average age of the population



The average age of the Romanian population is growing steadily

Old age dependency ratio

measures the ratio of the number of persons aged 64 and more per 100 persons aged 15-64 years

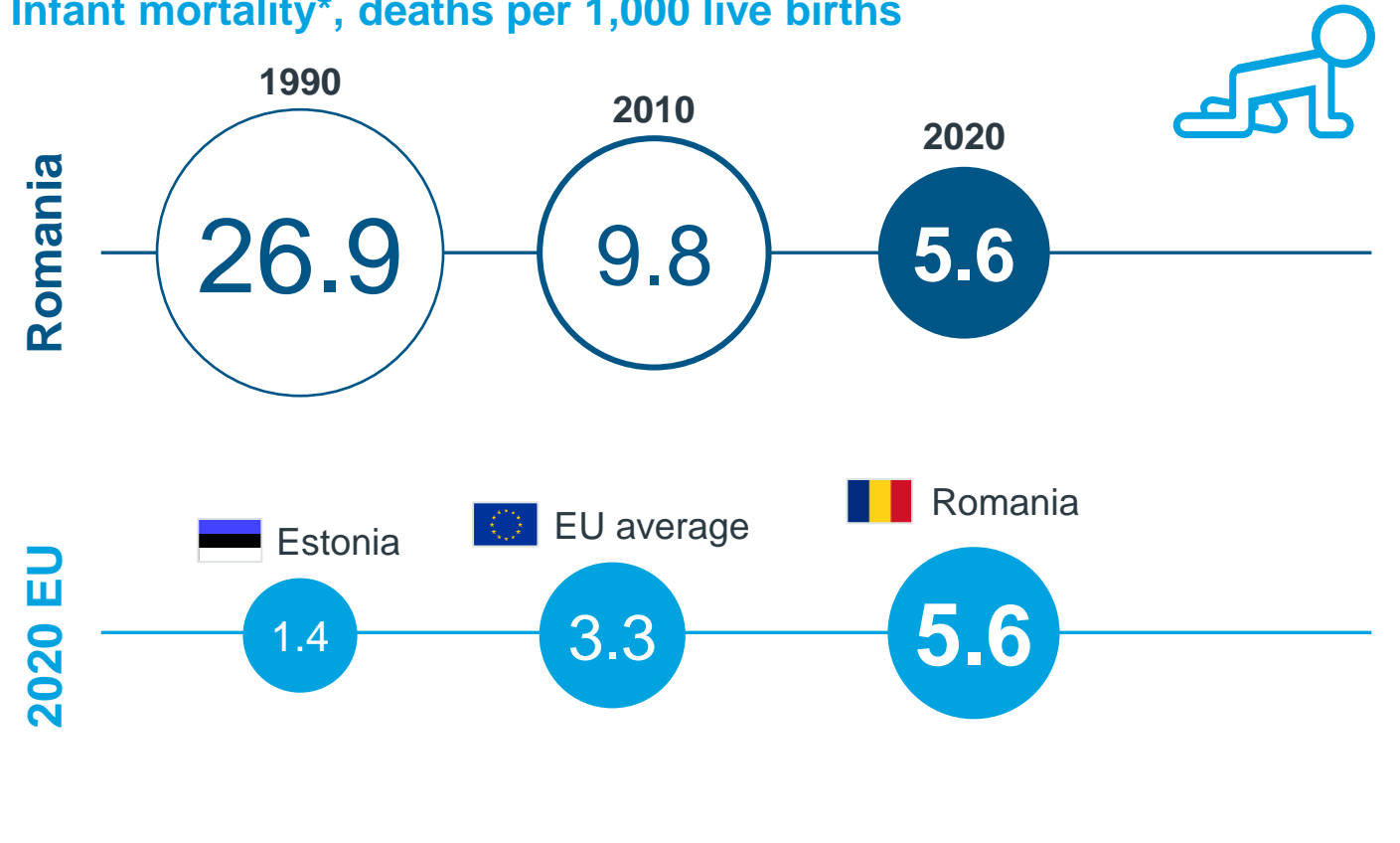


The population over working age will continue to increase, contributing to potential economic losses

Moreover, further reducing infant and child mortality would sustainably impact economic development indicators

Infant mortality in RO vs EU

Infant mortality*, deaths per 1,000 live births



- Infant mortality in Romania fell steadily for the last 30 years
- However, in 2020 it is still the highest infant mortality rate in the EU
- Prenatal care practices and screening/prevention programs from a very early age have the potential to reduce the mortality rate further

- In turn, this will have a sustainable effect on the country's economic development through improving the demographic situation

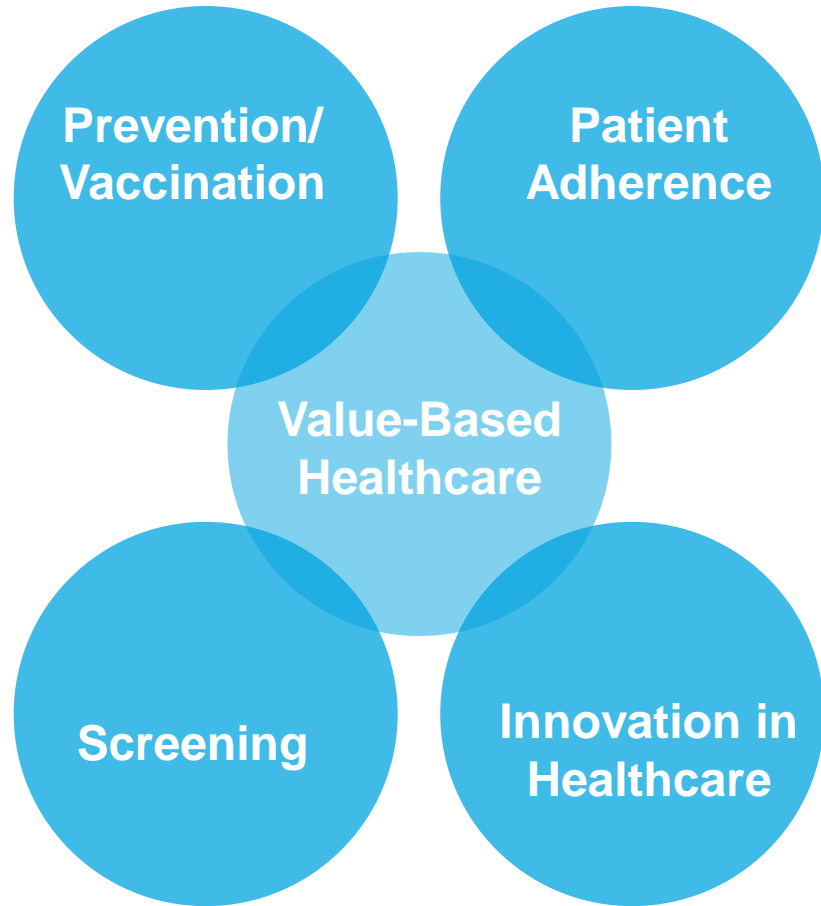
*Children died before reaching one year of age

Policy Efficiency



We offer a few examples of necessary steps and policies as means to save costs and, potentially, lives

Summary



Improve **quality of health care** and patients' health

e.g. 1 in 6 prostate cancer deaths and 1 in 4 lung cancer can be saved through screening alone and 200k deaths across the EU could be avoided through better patient adherence



Tackle extensive **inefficient healthcare spending**

e.g. effective CVD screening alone can address €230mn annual cost associated with premature deaths

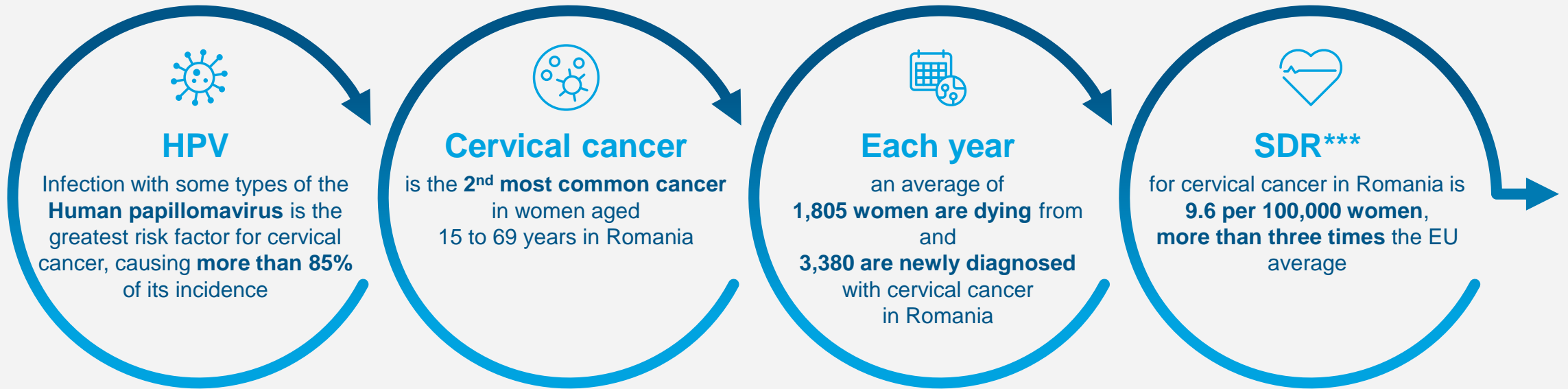
Prevention

The most cost-effective way of achieving good health is often to prevent the onset of the disease as early as possible

Example: the case of HPV in Romania*

- A rising challenge, both globally, and in Romania, is the increasing cancer mortality
- Cancer is a leading contributor to Romania's high amenable mortality rates
- Cervical cancer is one of the few types of cancer that can be directly prevented. HPV vaccination** is highly recommendable in case of high prevalence, such as in Romania
- Romania started its first HPV vaccination campaign in 2008, but only 2% of Romania's teenage girls got vaccinated and it was dropped
- New campaign was initiated in 2021 but because of insufficient doses (40,000), HPV vaccination was mostly restricted to well-off families that could afford them. MoH expanded the campaign in 2022 to 195,000 doses which will be enough to vaccinate fewer than 100,000 people, hardly enough for a country with over 1 million teenage girls
- The **success of this vaccination campaign** hinges on the **ability of authorities and doctors to communicate vaccines' benefits** against baseless concerns, the **willingness to invest in prevention** and the **establishment of efficient processes for reaching patients**

EXAMPLE:
CERVICAL CANCER



*HPV = Human papillomavirus, HPV vaccination also helps protect against other cancers caused by HPV, including some mouth and throat (head and neck) cancers and some cancers of the anal and genital areas*** SDR = standardised death rate

A broad vaccination against HPV has the biggest potential in terms of health outcomes, as well as cost-savings

Example: the case of HPV in Bulgaria

Economic cost estimate for different alternatives for one year




€11mn

Wide vaccination of girls, including costs for vaccines & their administration

Vaccination

€48mn

Including minimum cost of treatment for patients at each stage and the economic losses from premature death

Passive behavior

Investment in vaccination against HPV in Bulgaria is estimated to lead to

€37mn
in savings to the healthcare system

* Costs for medical checks, tests, one-time screening organization and coordination

Screening

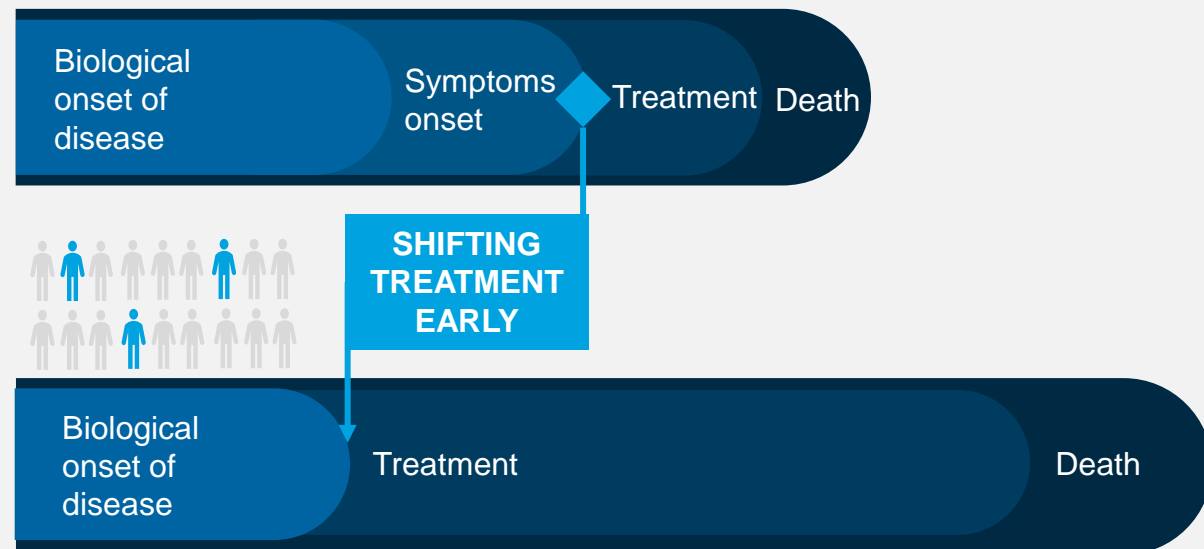


Timely diagnosis and treatment enabled by population-wide screening programmes are essential for healthy population

Screening programmes design

SCREENING CAN ADVANCE AND REVOLUTIONIZE HEALTHCARE...

The **purpose of screening is to identify people in an apparently healthy population** and offer **early treatment**



... THROUGH WELL-DESIGNED PROGRAMMES



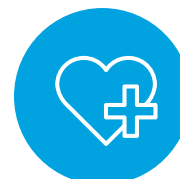
Participation → Successful screening depends on good coverage and uptake
Case Study 1: Colorectal cancer SP



Prevention → Identifying high risk patients and screening frequently enables better prevention
Case Study 2: Cardio-vascular diseases UK



Precision → Comprehensive biomarkers and genomic testing are key for screening precision
Case Study 3: Prostate cancer RO



Prioritization → Good screening programs focus on the key causes of death
Case Study 4: Lung cancers RO

Multiple screening programmes already planned for pilots and implementation in the National Cancer Plan

A screening with a 72% participation rate in the Basque country generated nearly EUR 100m savings and -16% in cancer incidence

Case Study 1: Colorectal cancer screening SP



CASE: SPAIN, BASQUE COUNTRY COLORECTAL CANCER SCREENING PROGRAMME



The Basque Country has a population of **2.2 million**



Target for the screening were **586,700** residents



72% achieved participation rate

-16% in cancer incidence

-26% in cancer mortality

EUR 93 Million

net savings through saved costs on treatment and prevented economic losses through saved lives

The Screening Program

- Specific software was linked to medical records and cancer registries
- Invitations sent by post together with a kit with an FIT* test and individualized identification code
- Primary Health Centres reinforces information, collects kits and organizes colonoscopy for positive cases

* FIT is Faecal Immunochemical Test used for bowel cancer screening

In the UK, a CVD screening & prevention detected 700 000 people at high risk of CVD and helped diagnose 175 000 patients

Case Study 2: Cardio-vascular screening UK



CASE: UNITED KINGDOM, NHS HEALTH CHECK CVD SCREENING PROGRAMME



People* **40 to 74** eligible for screening



15.7mn total eligible population (2015-2020)



£48mn spent on commissioning NHS Health Checks per year (2019)

700k people at high risk of CVD detected

175k patients diagnosed with hypertension, **35k** with diabetes type 2 and **11k** with CKD***

£141mn return from a societal perspective (£2.93 for every £1 spent)



CASE: "EVERYTHING FOR YOUR HEART" SCREENING PROGRAM (DURATION: 2020-2023)



Objective:

- Train **900 GPs**
- Run an education campaign and screen **165,000 patients** (50% from vulnerable groups)



Budget: **~€4mn**



Program initiated and implemented through collaboration multiple stakeholders**

Burden of chronic Heart Failure in Romania: **230 mn EUR** annul costs associated with premature deaths

*People aged 40 to 74 without preexisting conditions

** National Institute of Public Health (INSP), Romanian Society of Cardiology (SRC), Romanian Health Promotion Association (ARPS), Emergency Institute for Cardiovascular Diseases and Transplantation (IUBCVT) Târgu Mureş, Institute of Cardiovascular Diseases (IBCv) Timișoara, Coalition of Romanian Chronic Disease Patient Organizations (COPAC)

*** CKD is chronic kidney disorder

In Romania, screening for the 2nd most common cancer in men is also planned for 2024 and expected to bring millions in savings

Case Study 3: Prostate cancer screening RO



CASE: ROMANIA PROSTATE CANCER SCREENING PROGRAMME

2,900

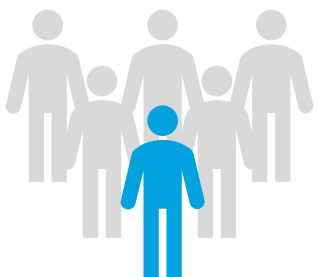
men are diagnosed with cancer annually

2,300

men die from prostate cancer leading to 3 years of life lost per 1,000 men

65%

prostate cancer cases are diagnosed at **stage IV**



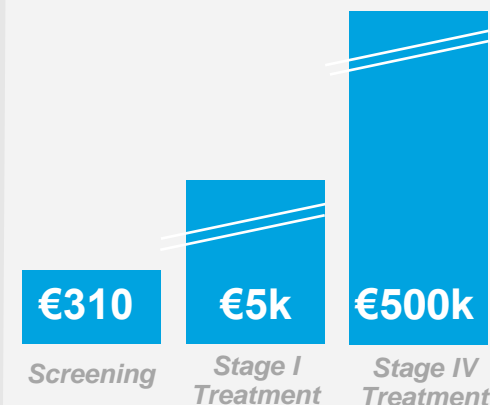
1 in 6

deaths could be prevented through **targeted prostate cancer screening**

Nationwide prostate cancer screening in Romania is planned for 2024. To be successful, such programme should:

- Target men who are **pre-disposed to prostate cancer**
- Involve a **blood test** and an **MRI scan** before an invasive biopsy to ensure better diagnostic of aggressive cancers whilst reducing over-diagnosis and unnecessary treatment of insignificant ones
- Include **genomic testing** for more accurate diagnostics

Screening and early cancer treatment is **10x cheaper** than **Stage IV care**

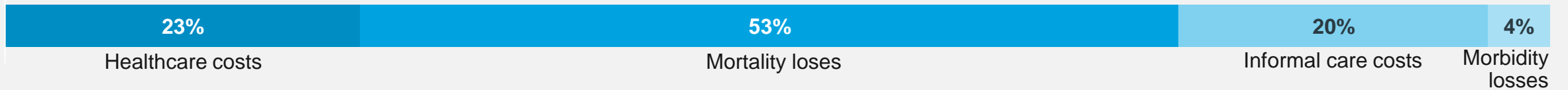


Source: Europa UOMO (Europa UOMO is a European advocacy movement representing 27 prostate patients' groups in countries across Europe), National Cancer Plan, University College London

EU Council encourages screening for wider set of disease, including lung cancer which is the number one cause of cancer death

Case Study 4: Lung cancer screening RO

€18.8bn spent annually on lung cancer across the EU



Burden of lung cancer in Romania

Lung cancer is responsible for:

- 4% of all deaths in Romania
- 72,000 episodes of hospitalization per year related to lung cancer
- 10% is the 5-year survival rate of lung cancer patients (vs 15% EU average)
- 10 years of life are lost prematurely per 1000 adults due to lung cancer



Lung cancer screening to reduce mortality by 25%

Based on multiple large-scale trials, screening with LDCT* can reduce mortality by nearly 25%, by shifting lung cancer detection to an earlier stage when offered to smokers or ex-smokers of both sexes in the age range 50–80



EU Council calls for swift implementation of lung cancer screening programs

after a comprehensive evidence review which states that there is a strong scientific basis for introducing life-saving screening programs in EU Member States for lung cancer screening



Genetic testing is essential part of lung cancer screening

assessing an individual's genetic risk of lung cancer and providing invaluable insights about the gene mutations which will drive the best treatments

Note: LDCT is low-dose computed tomography

Source: Economic burden of cancer across the European Union: a population-based cost analysis. The Lancet Oncology, Genetic Testing for Lung Cancer Risk, NELSON Study

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Meanwhile, with no effective nation-wide screening program, the screening rates in Romania fall far below the EU average

Cancer Inequality

BREAST CANCER: Women that have self-reported to have never had breast examination by X-Ray (% , 2019)



COLORECTAL CANCER: People that have self-reported to have never had colorectal screening test (% , 2019)



CERVICAL CANCER: Women that have self-reported to have never had cervical smear test (% , 2019)



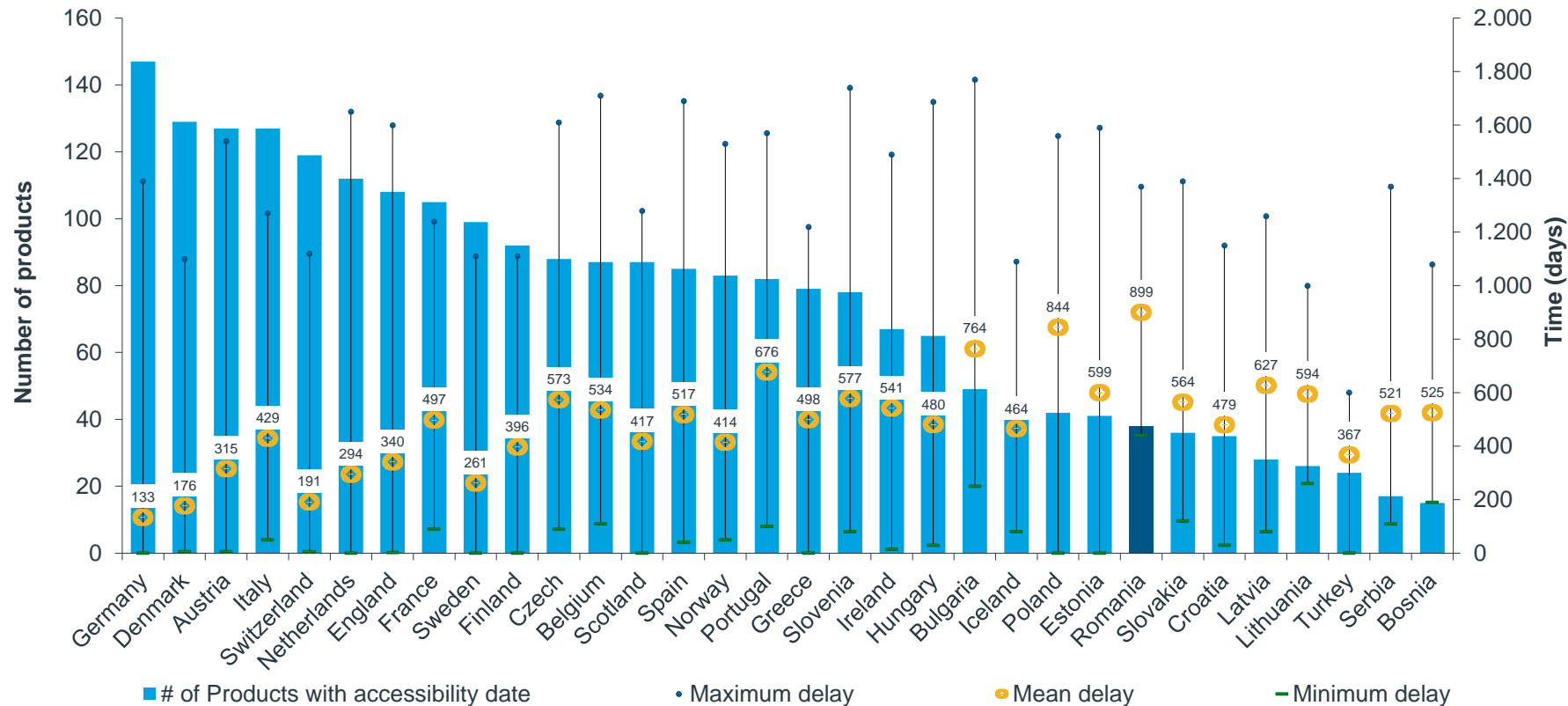
The **lack of nation-wide screening programmes** run at scale as well as the **limited awareness** on screening across the population has created a huge gap between Romania and the EU when it comes to breast, colorectal and cervical cancer

Innovation in healthcare

Adoption of innovative pharmaceuticals can also avoid unnecessary costs in other parts of the healthcare system

Access to innovative medicine

Time to availability (2021) of innovative medications



- Romania still has a lower rate of availability of medications, as well as the longest time to availability (the days between EMA marketing authorization and the date of availability to patients) of 899 days
- Innovative pharmaceuticals play a crucial role in improving the health of patients, and can avoid unnecessary costs in other parts of the healthcare system

Cell therapies are unlocking precision medicine, starting with oncology, but Romania is falling behind

Example: Cell and Gene therapy

Starting with oncology, **cell & gene therapies** have initiated a **revolution in precision medicine** (PM) leveraging advanced genomic understanding of disease progression to enable targeted therapies and allowing **every patient to receive the highest degree of personalization**

In Romania there are 2 cell & gene therapies approved, starting with 2020. Only a **limited number of patients** have accessed these therapies. To ensure patients have access to best-in-class treatments, **Romanian health systems** need to be adapted and reformed



FUNDING → High price points prove challenging for HCSs* with smaller budgets



INFRASTRUCTURE → Preparation and approval of cell and gene therapy centers is a burden both to governments and pharma companies



HUMAN RESOURCES → To administer cell therapy, a center needs medical and paramedical personnel with specific skills

*HCSs – healthcare systems

Source: Scientific article - Do Advanced Therapies Have a Future in the Low- and Middle-Income Countries?, McKinsey Healthcare as an Investment

PET technology as well as other advanced imaging technologies are revolutionizing precision medicine

Example: PET CTs

Positron emission tomography (PET)

as well as other **advanced imaging technologies** are revolutionizing **precision medicine** and **precision oncology** through their ability to identify areas of disease that are more likely to respond to targeted therapies and helping HCPs deliver **more impactful treatments**

In Romania there are **15 PET scan devices** across 9 counties and to leverage the multiple benefits of this innovative imaging tool, MoH has established an annual **National Program for PET-CT** but in 2022 the program is limited to only 12 thousands patients with cancer and epilepsy



FUNDING → With higher price of devices and procedures and significant regional discrepancies, access to this diagnostic is still uneven



INFRASTRUCTURE → Simplification of the application process and growing demand will contribute to an increase in PET-CT scan use



HUMAN RESOURCES → There is huge shortage of radiologists across Europe and with 12.3 radiologists per 100 thousand people, Romania is even below the average

Patient Adherence

Poor adherence undermines pharmacotherapy outcomes for patients and carries significant costs to healthcare systems

Patient adherence in the EU

“Drugs don't work in patients who don't take them”

C. Everett Koop, US Surgeon General

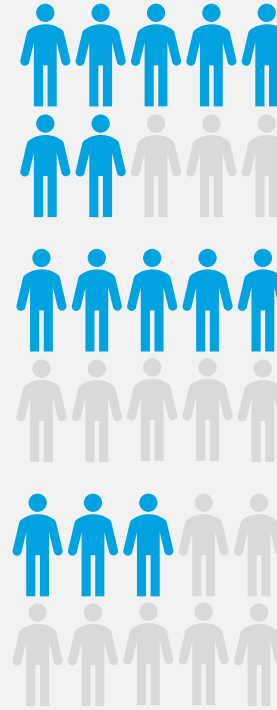


Impact of patient non-adherence across the EU

194,500 deaths per year in the EU due to misdoes and non-adherence to prescribed medications

€1.25 billion annually is the non-adherence cost in the European Union

Magnitude of non-adherence is larger than perceived, *EU Diabetes Case Study*



7 OUT OF 10 patients initiated on diabetes medication will fill their first prescription

UP TO 5 patients who initiate their prescription take their medications regularly

ONLY 3 of those will be continuing to take their medications within 2 years

Healthcare industry stakeholders now have great potential to change that, addressing non-adherence factors on every level

Factors driving non-adherence



Healthcare system-related factors

- **Physicians-related factors**, including quality of patient-provider interaction
- **Access-related factors**, including payor type, drug reimbursement



Condition-related factors

- **Disease experience**, including patient tenure, adherence to other drugs
- **Comorbidities**, including presence and number of comorbidities



Therapy-related factors

- **Experience with the drug**, including side effects, past adherence
- **Coprescriptions**, including number and type of concurrent medications



Patient-related factors

- **Behavior and beliefs**, including forgetfulness, wrong beliefs, preferences
- **Education**, including low health literacy



Socio-economic factors

- **Household stability**, including marital status, children, financial status
- **Activity levels**, including financial contributions, memberships

All stakeholders should influence adherence:

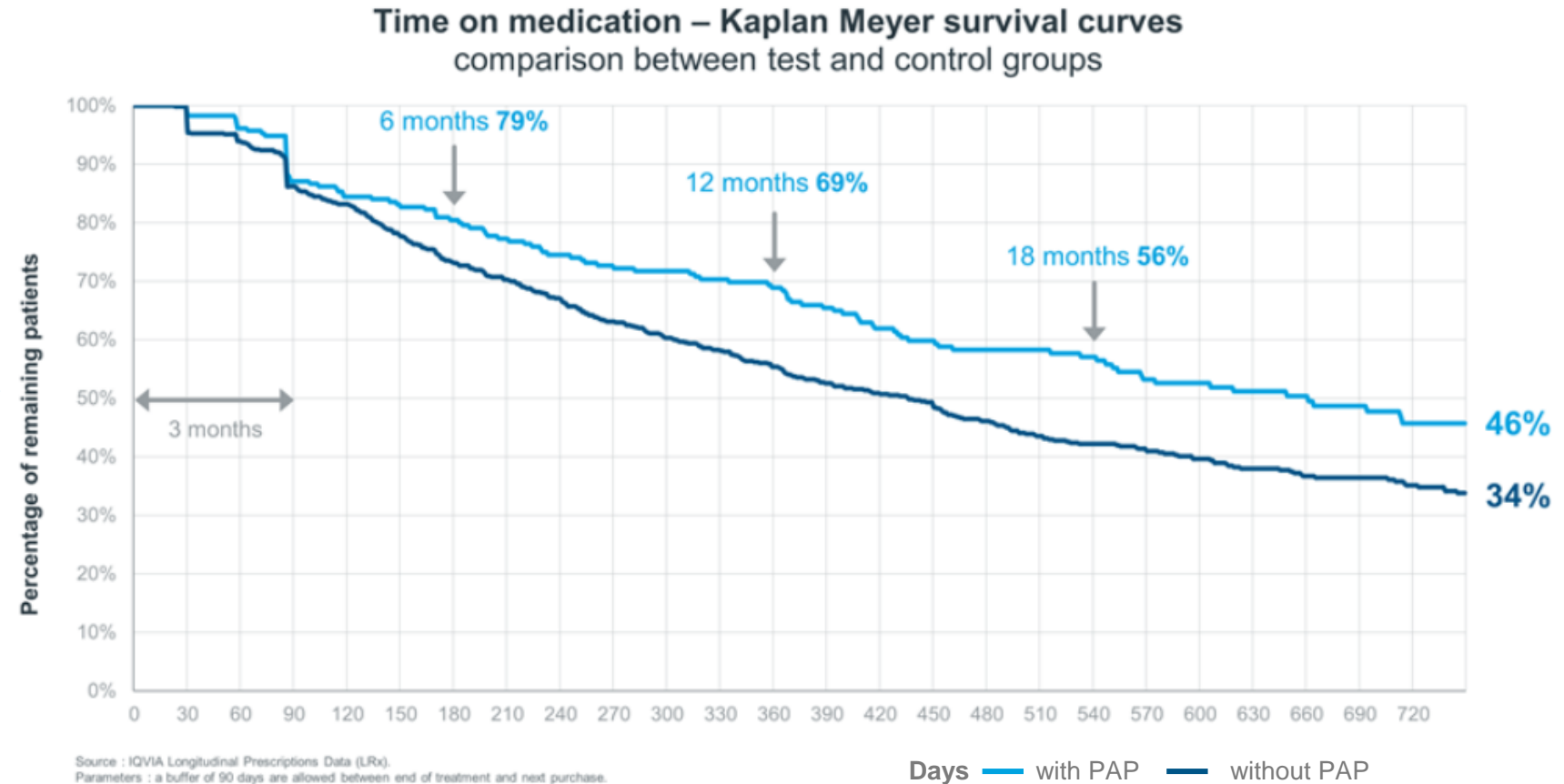
Providers to have great impact through face-to-face communication despite limited time for consultations. Nurses and pharmacists also expected to play bigger consultative role.

Payers and Pharma companies to support the implementation of patient adherence programs for therapies with highest impact

An effective way to help patients remain more compliant and adherent to medications are Patient Adherence Programs

Example: Patient Adherence Programs (PAP)

- A pharmaceutical company with a treatment for multiple indications had enrolled about **500 patients in a PAP** and used innovative technology to provide patients with **customized digital reminders** to help them keep to their medication schedule
- As seen on the figure, 69% of the patients in the test group, compared to 55% in the combined control groups, remained on their medication at the one-year mark and **46% of those in the program remained on therapy**, versus 34% in the control group at the two-year mark



*The Kaplan-Meier survival curve is defined as the probability of surviving in a given length of time while considering time in many small intervals.

Source: IQVIA

Healthcare as an Investment

But there are many more ways we could support adherence with just a simple phone follow-up proving to be very efficient

Example: New Medicine Service (NMS)

NMS addresses patients' decision to adhere to a medicine often made in the first 2 weeks...



Patient is prescribed medicines for **asthma** and **COPD**, **high blood pressure**, **Type 2 diabetes** or is taking **anticoagulant therapies**



Pharmacists who is part of NMS follows up with a **phone call** after **7 to 14 days**



Pharmacists follows up again with **phone call** **2 to 3 weeks later**

3-5 weeks

By offering consultations in community pharmacies (NHS cost of £25 per pharmacists)

12,000 pharmacies

5.7mn consultations*

278,700 more QALYs

And has already achieved remarkable results in adherence and savings



11% more patients adhered to therapy**

£75.4mn short-term savings

£517mn long-term savings

Value-based healthcare

Challenges within the healthcare system often lead to unacceptable patient outcomes so now we should shift our focus to value

Value-based healthcare

CURRENT HEALTH SYSTEM IS FLAWED

- **Outcomes** – health outcomes vary widely between and even within countries (e.g. reoperation rates following hip replacement surgery in Germany are 18 times higher in the worst performing hospitals than in the best)
- **Costs** – across the EU, **healthcare costs are rising faster than GDP growth** and 10% to 34% of health care spending is wasted on inappropriate care
- On top of that, **Romania lags other countries in the region** at most healthcare indicators and lacks disease prevention and early diagnosis initiatives

Value-based approach (VBHC) has the potential to provide the necessary resilience to move forward, leveraging:

- (1) Value-based procurement (VBP)
- (2) Personalized or precision medicine (PM)

ENABLERS > OUTCOMES



ENGAGEMENT - engage patients to understand what matters and support their empowerment



GOVERNANCE - ensure governance and capabilities



DIGITALIZATION - use digital health, analytics to better support decision making



FUNDING & PURCHASING - shift focus from activity to outcomes (e.g. managed entry agreements)



PATIENTS - cost savings, improved experience & outcomes, access to treatment



PAYER - cost control and reduction of financial risk



PROVIDER - operational efficiency, quality of services, innovative treatments

To fully unlock the benefits of value-based healthcare, payors need to also transition to value-based procurement

Value-based procurement (VBP)

Current procurement processes DO NOT support value-based healthcare

Medical products, including devices, supplies and equipment, are purchased primarily on the basis of **up-front purchase costs** and often focus on **short-term cost savings** and does not address the needs of patients but is driven by **organizational issues** (i.e. silos within hospitals, misaligned incentives, etc.)

70%

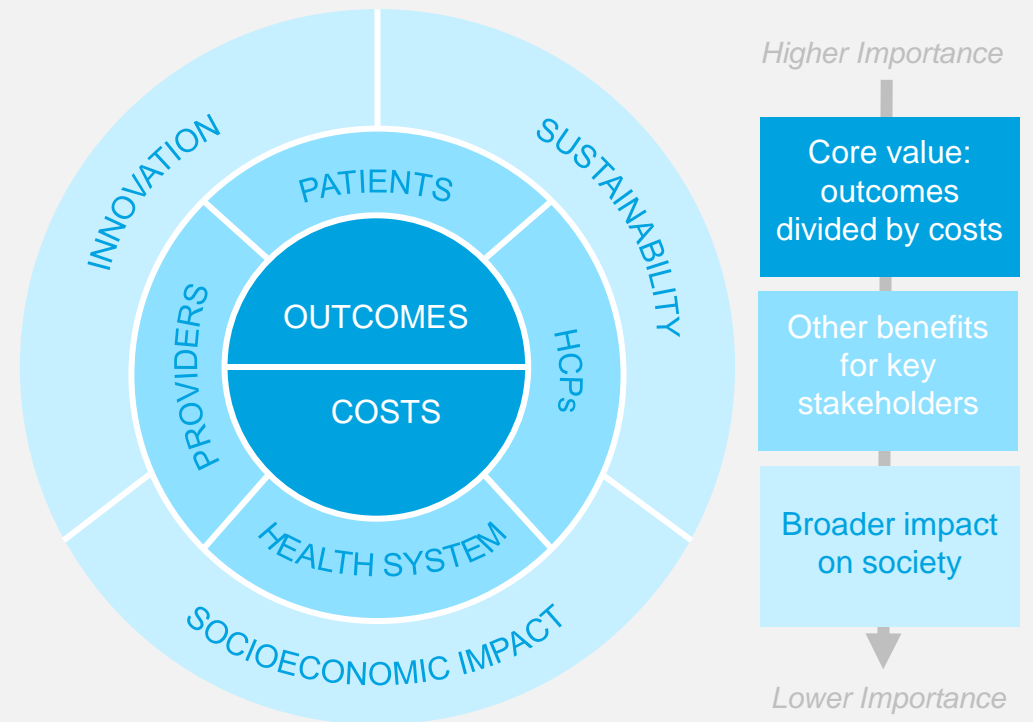
of MedTech sales go through a public-procurement process



70%

of the decisions in those cases are determined on the basis of price

IN 2014, the **EU passed a new directive on public procurement** to encourage more holistic perspective and the **Value-Based Procurement (VBP) framework** is aligned with this new direction



Value-based care also goes hand in hand with personalized medicine with both having one focus area – patient outcomes

Personalized medicine and value-based healthcare

The data and analytics which are an integral part of **personalized medicine** will help validate the **value delivered** and define and enhance the right reimbursement model

Personalized medicine will further grow driven by the availability of high-quality and consistent data used to model, plan and direct therapies with greater accuracy



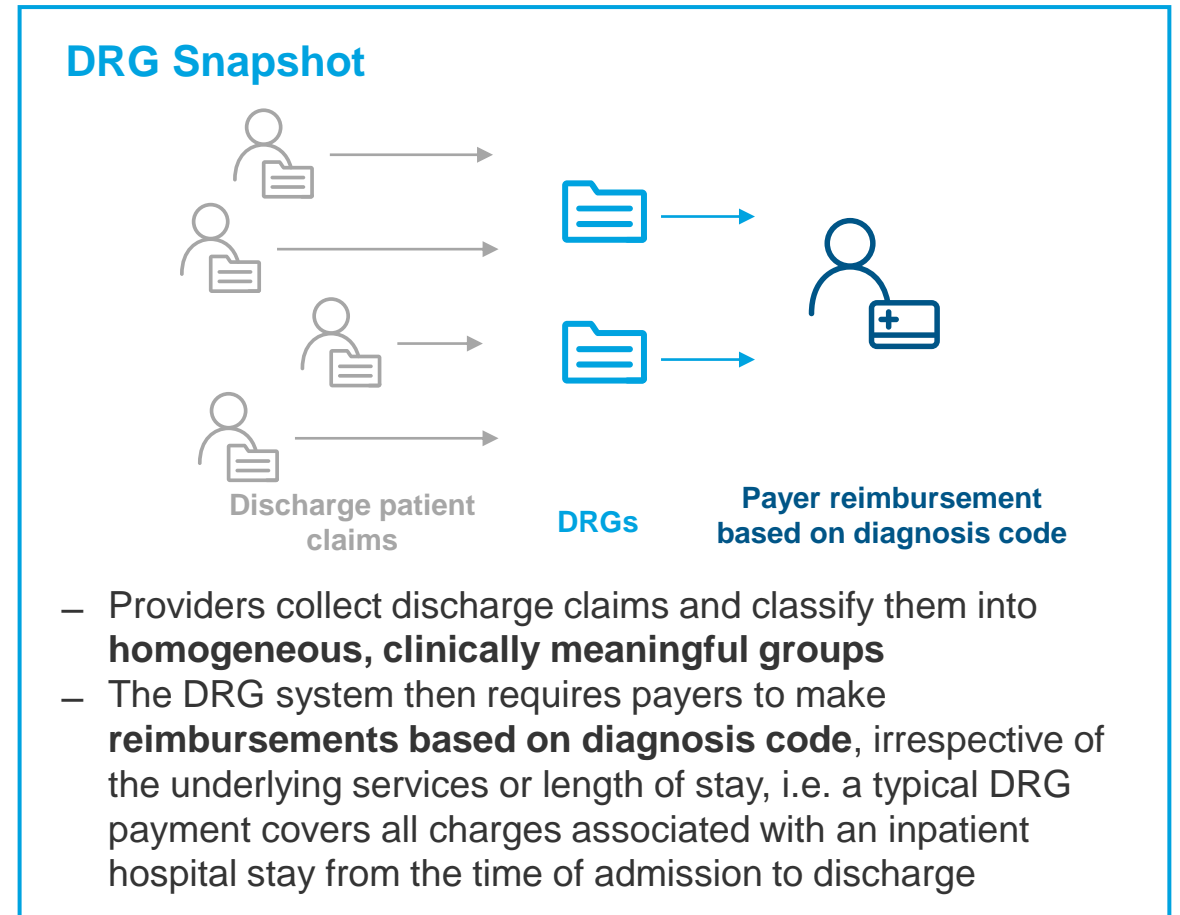
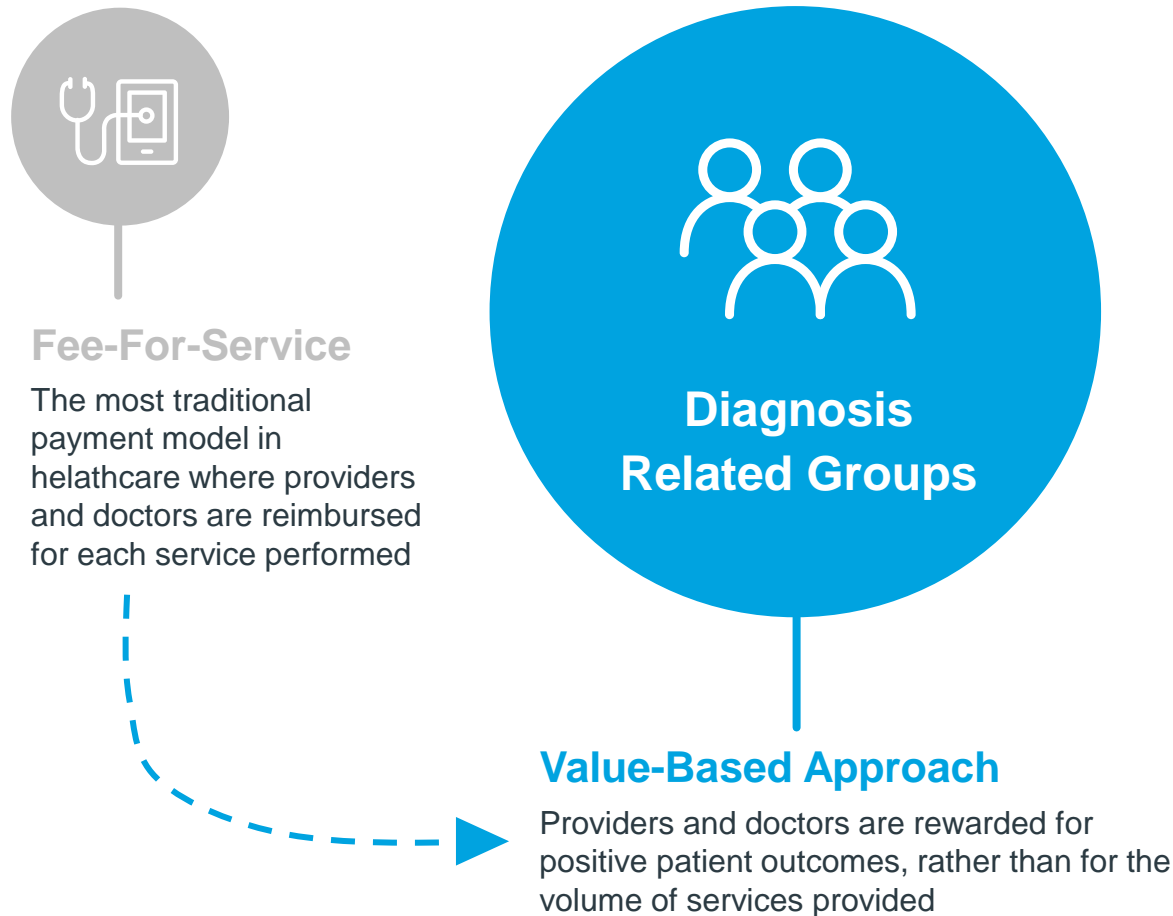
Value-based care would reward hospitals and providers for helping patients improve their health, reduce the effects of chronic diseases and help patients live healthier lives

The **value-based approach** will further incentives companies to develop **personalized medicine** solutions such as tailored drugs, diet and exercise outcomes monitoring, improving disease prevention

- **Personalized medicine** has the goal of giving the right treatment to the right patient at the right time, in a seismic shift away from ‘one-size-fits-all’ models that no longer work.
- For those to be introduced in Romania, the MoH will have to **define and implement** fast tracks of evaluation and reimbursement for **immunotherapies, personalized drugs and genetic testing**, some of which are now part of the National Cancer Plan, and **consider the value-based model**

The Diagnosis-Related Groups (DRG) systems are on way to encourage value-based care in practice

Example: Diagnosis-Related Groups (DRG)



Cost optimization potential & smart spending in healthcare

Allocation of already existing funding could be optimized, and savings could be achieved by first focusing on four areas

Summary

There are several potential sources for cost optimization to support targeted strategies and to sustain the needed overall increase in healthcare investments



Medical Infrastructure

- Understanding inefficiencies & gaining cost transparency can help identify cost optimization areas, e.g.:
 - Medical workforce is challenged by a fragmented distribution and migration
 - Outpatient care contributes to 19% of total costs in Romania compared to 30% in EU, leading to weak primary care
 - No of medical devices are comparably low within the EU and vastly underutilized



Loss of Exclusivity

- In the next 4-5 years there is a paradigm shift to a period where a significantly high number of products will lose exclusivity
- Cost reduction from loss of exclusivity can lead to freed up resources which can be re-allocated to increase patients access to treatment



Technology

- Enabled by technology, savings could also be realized through improved efficiency, e.g.
 - EU study shows a potential impact of technology & AI in European health systems can lead to € 212bn annually
 - UK study on cost-effectiveness of Robotic-Assisted Radical Prostatectomy (RARP) in localized prostate cancer shows £ 1,800 savings per patient



Digitalization

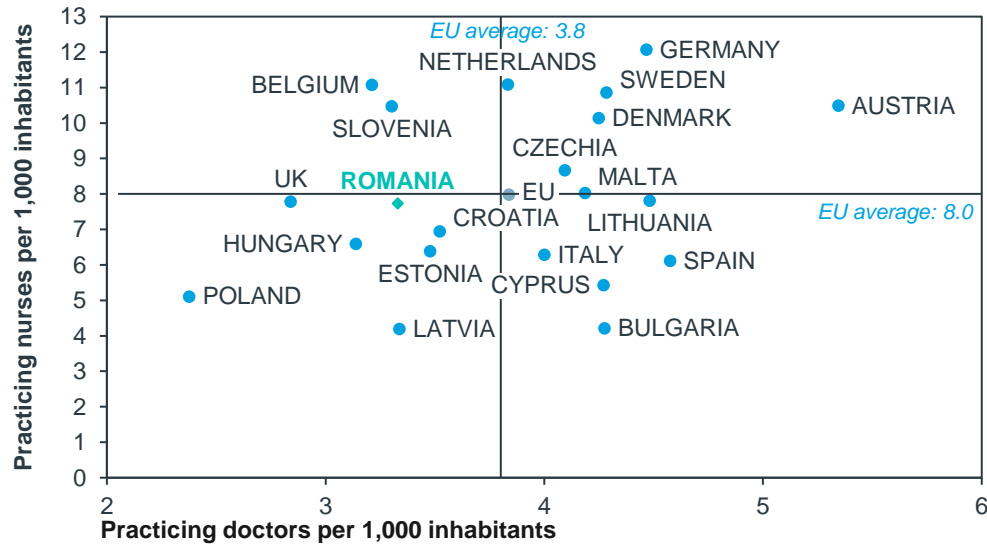
- Romanian digital health system is assessed as *“underdeveloped and challenged”*
- Romania still hasn't passed any around digitalization (i.e. digital health act, electronic health ID, interoperability or electronic health records (EHRs))

Medical infrastructure

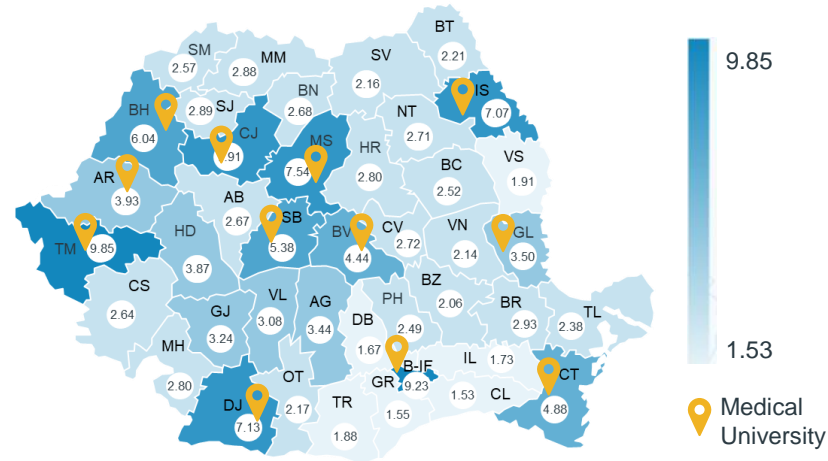
Understanding the healthcare workforce structure and availability in Romania is essential for its cost optimization

Healthcare personnel in Romania

Doctors and nurses per 1,000 inhabitants, 2020*



Medical doctors per 1,000 inhabitants, 2021





1,500- 2,000
doctors

on average leave Romania yearly due to low recognition and low pay, which accelerates the shortage of medical personnel

- Romania has a lower than the EU average number of practicing doctors per 1,000 inhabitants, 3.3 in Romania vs 3.8 EU average with notable fragmentation in their distribution across the country
- The shortage of medical personnel is accelerated by the migration of medical professionals in the last years
- To successfully tackle the persisting problems and negative trends, it is essential to take necessary action, i.e. raise salaries for paid specializations, provide regional incentives and support educational initiatives

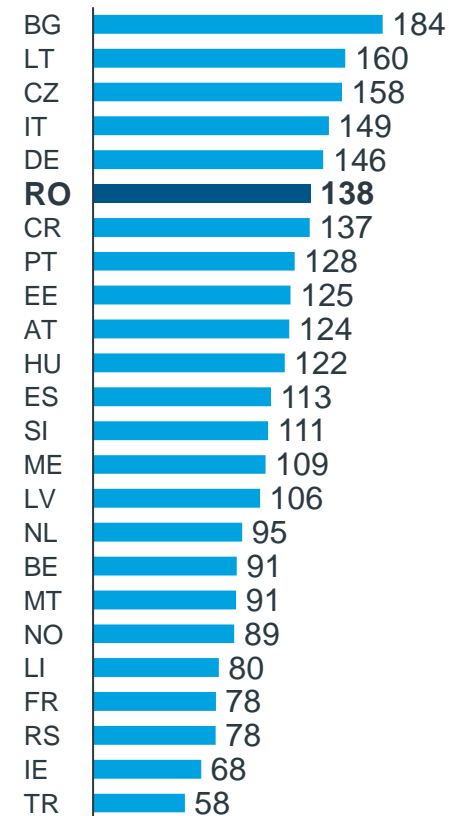
* Or latest data available

Source: Eurostat, INS

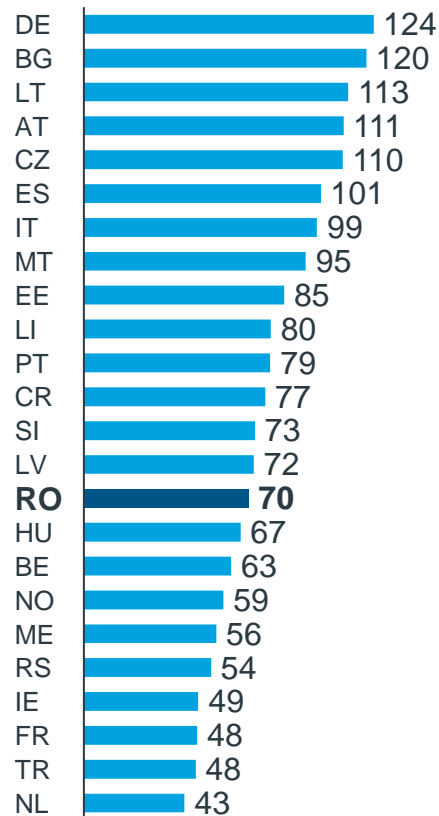
Uneven distribution of physicians per specialty and age group could create pressure and challenges to the healthcare system

Healthcare personnel per specialty: RO vs EU

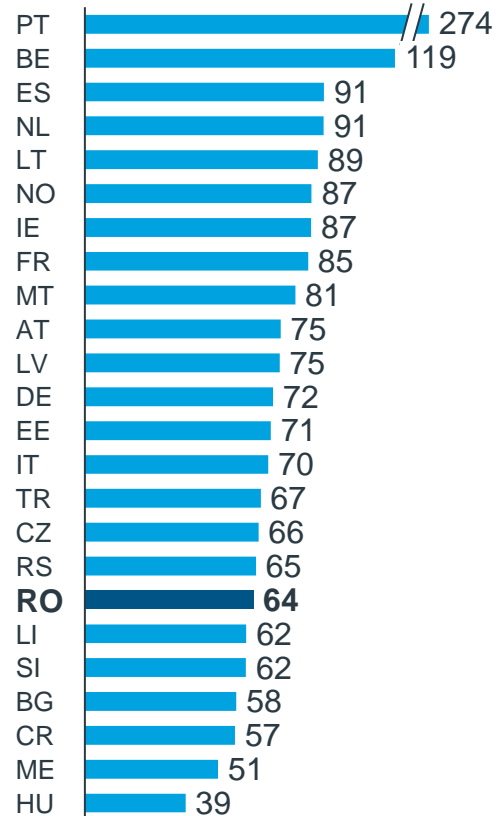
Medical group of specialists*
per 100,000 inhabitants, 2020



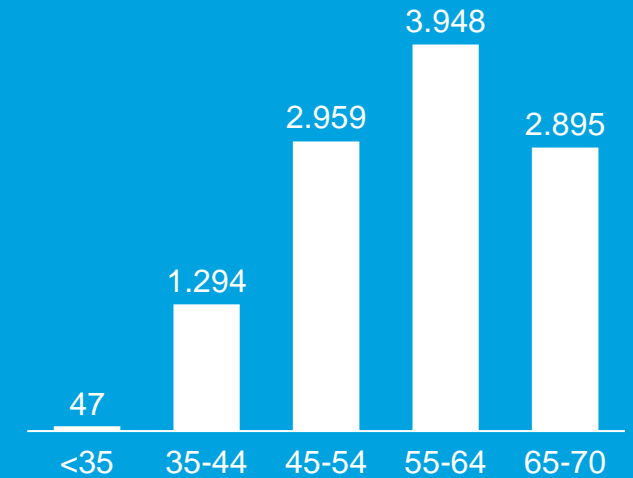
Surgical group of specialists**
per 100,000 inhabitants, 2020



GPs
per 100,000 inhabitants, 2020



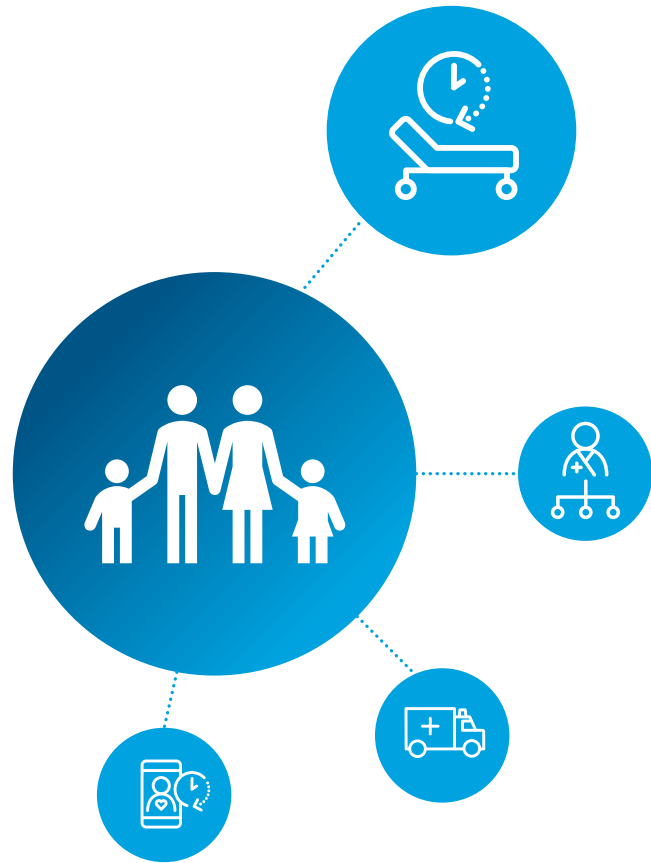
GPs, by age*, 2020**



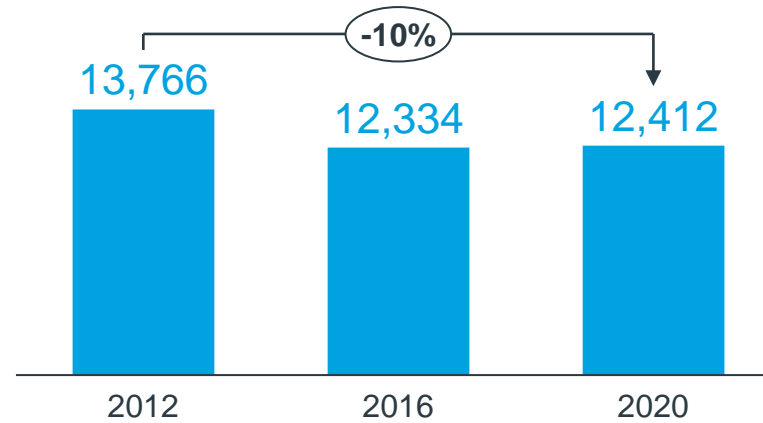
Romania also has ageing healthcare workforce; e.g. Romania is expected to lose ~18% of its current family doctors in the following 10 years due to the retirement of those currently aged over 55 and has insufficient younger workforce to replace them

Hospital care remains dominant mainly due to weak primary and outpatient care causing unnecessarily high costs

Healthcare personnel: Specialists to General practitioners ratio



Number of general practitioners



Ratio of specialists to GPs, 2020



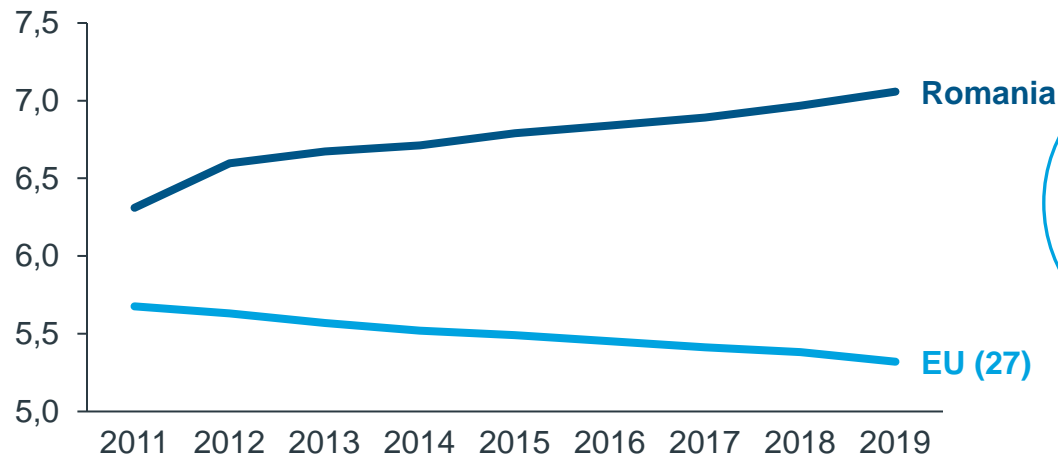
GPs are supposed to act as gatekeepers to the healthcare system, being the first point of contact

A lower concentration of GPs, lack of availability and often wrong incentive elements result in a **weak primary care system** and thus high dependency and **over-reliance on inpatient care**

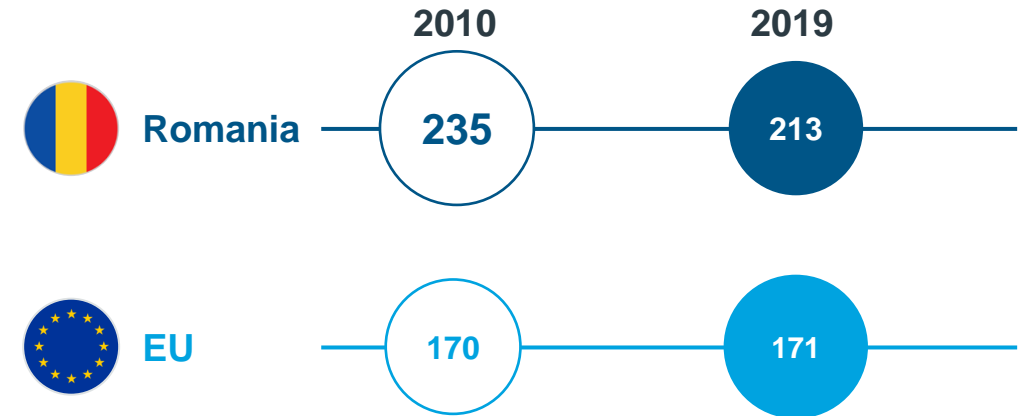
Primary care and outpatient accessibility need to be drastically improved to reduce avoidable inpatient care

Hospital infrastructure: Number of beds and hospital discharges

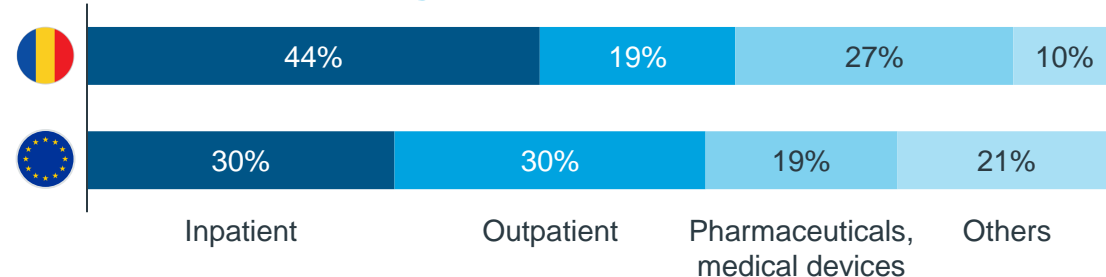
Number of hospital beds per 1,000 inhabitants



Yearly hospital discharges per 1,000 inhabitants



Healthcare spending per care area, 2019

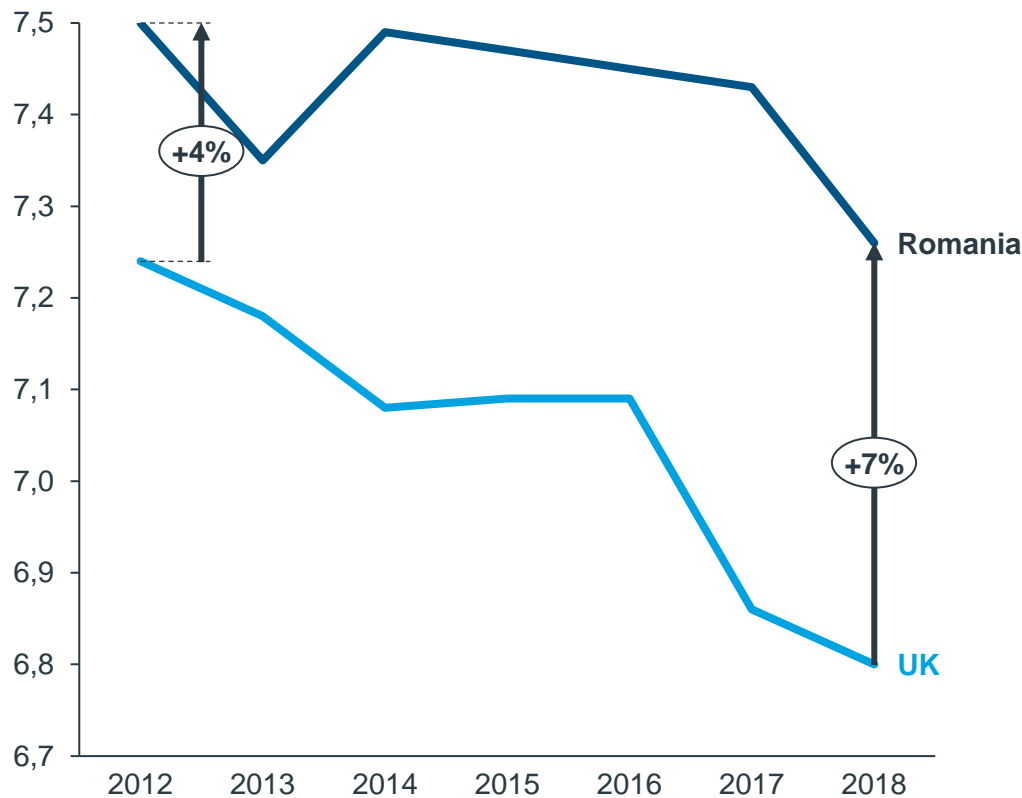


- Romania takes the 4th place in the EU when it comes to hospital beds, as well as 2nd place in terms of hospital discharges per capita in 2019
- Compared to outpatient care costs the inpatient care costs takes up **twice as much** from the total spending (44% vs 19%). In contrast, on average in the EU, those are equal
- Hospitalizations are often the result of patients bypassing primary care

While Romania has reduced the average length of stay in curative care, in-patient care length is much higher than the UK's average

Hospital infrastructure: Length of stay

In-patient care average length of stay (avg. days)

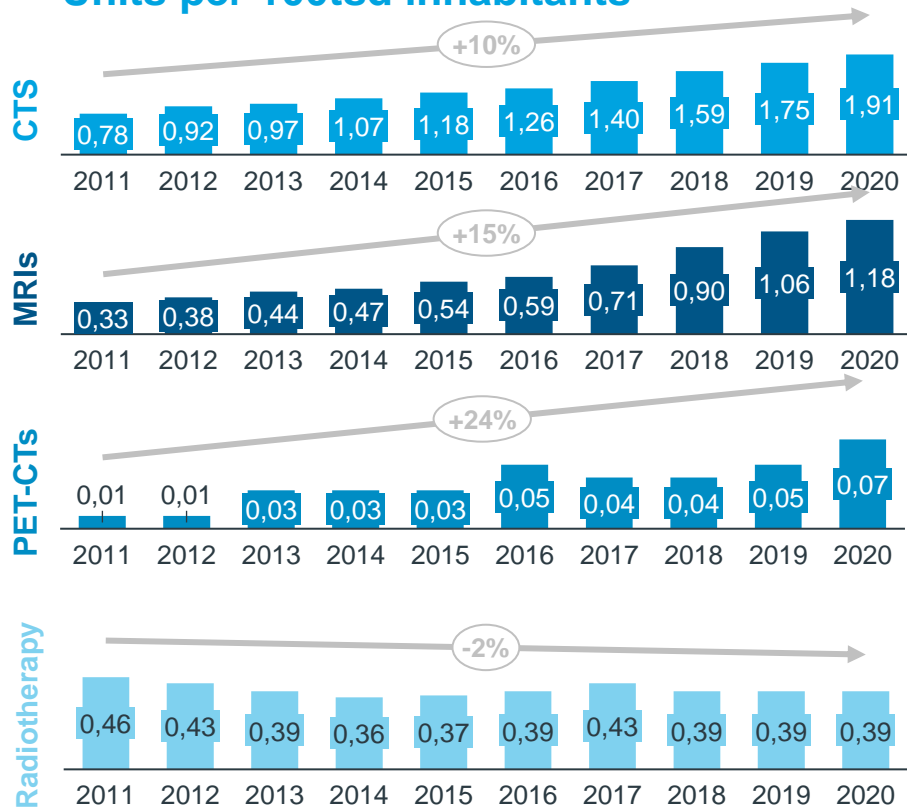


- While there has been a **decrease in in-patient average length of stay**, Romania still has work to do to close the gap compared with **western countries in Europe, e.g. the average length of stay is UK**
- Optimizing and reducing length of stay improves financial, operational, and clinical outcomes by decreasing the costs of care for a patient, not only in facility expenses and supplies but also in staffing. At the same time it can improve patient outcomes by minimizing the risk of hospital-acquired conditions

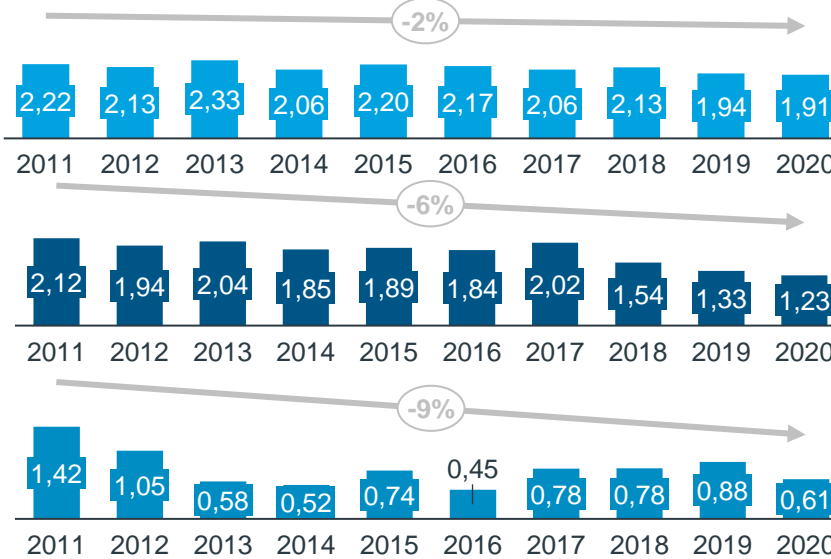
When it comes to medical devices, Romania has followed a positive trend, slowly increasing availability of some devices

MedTech landscape in Romania

Units per 100tsd inhabitants



Scans per machine



Data not available

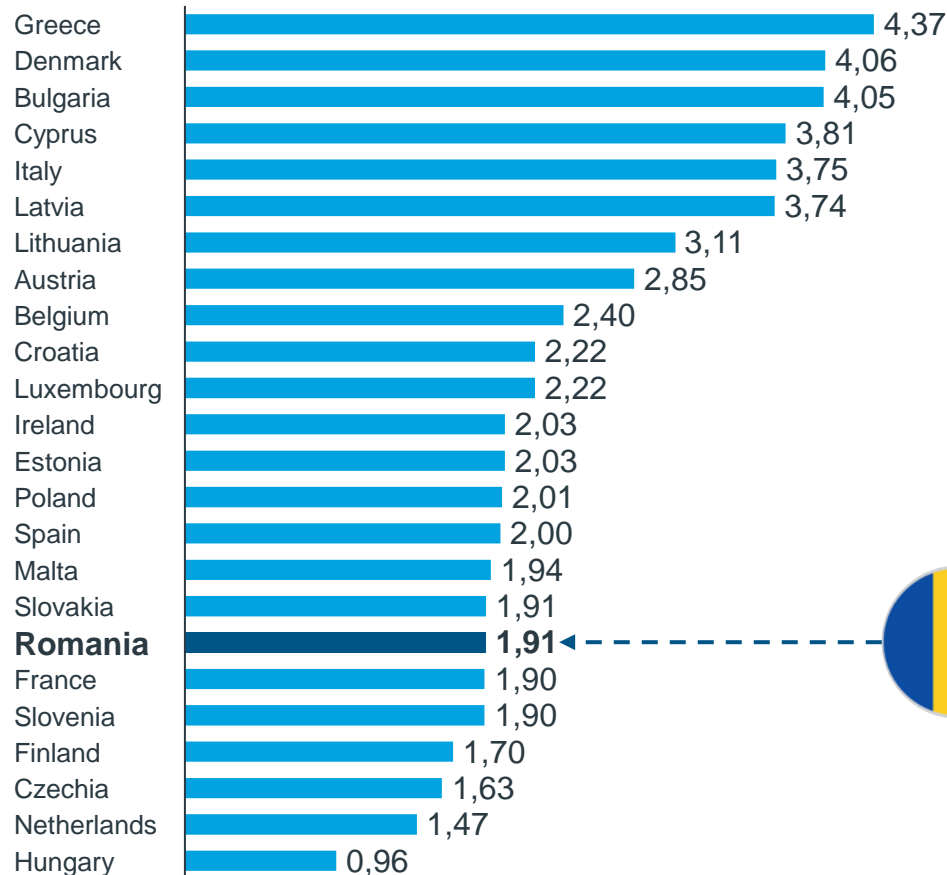
- Computed Tomography Scanners (CTS), Magnetic Resonance Imaging (MRI) units, Positron Emission Tomography scanners (PET) have become more available since 2011, which has released the pressure on individual machines and scans per unit have been decreasing
- Radiotherapy equipment units haven't experienced the same trend and are still below the recommended values*
- Additionally, disproportionate regional distribution of all units poses another threat on general accessibility

* European Society for Radiation and Oncology (ESTRO) recommends 1 linear accelerator / 200,000 inhabitants

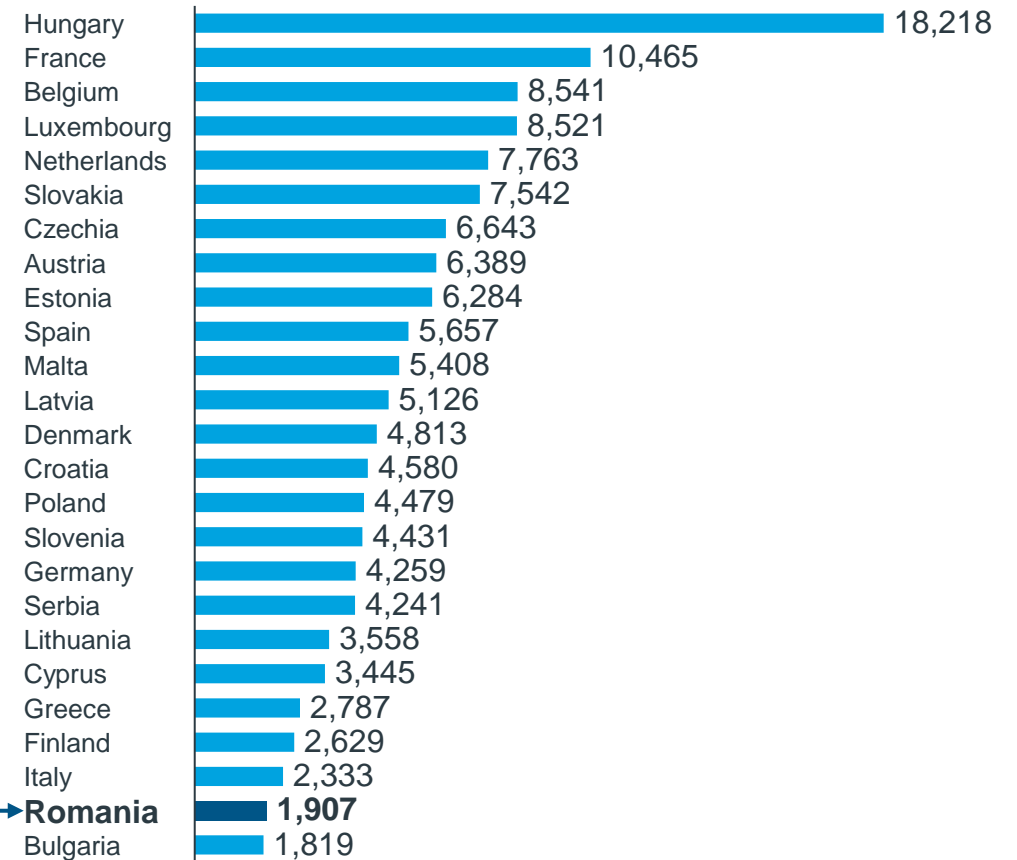
Number of CTS units is comparably low within the EU and remain vastly underutilized in Romania

MedTech landscape: CT in EU vs Romania

CT Units per 100tsd inhabitants, 2020*



CT Scans per machine, 2020*

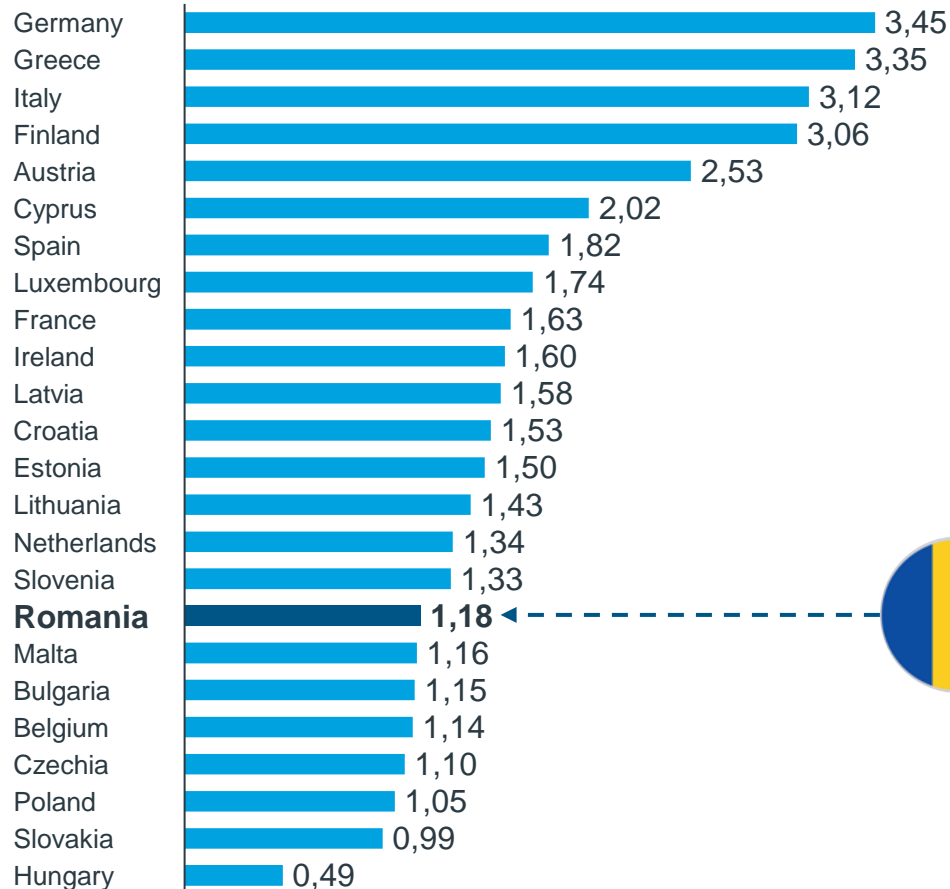


Source: Eurostat – Units in hospital and ambulatory providers
Healthcare as an Investment

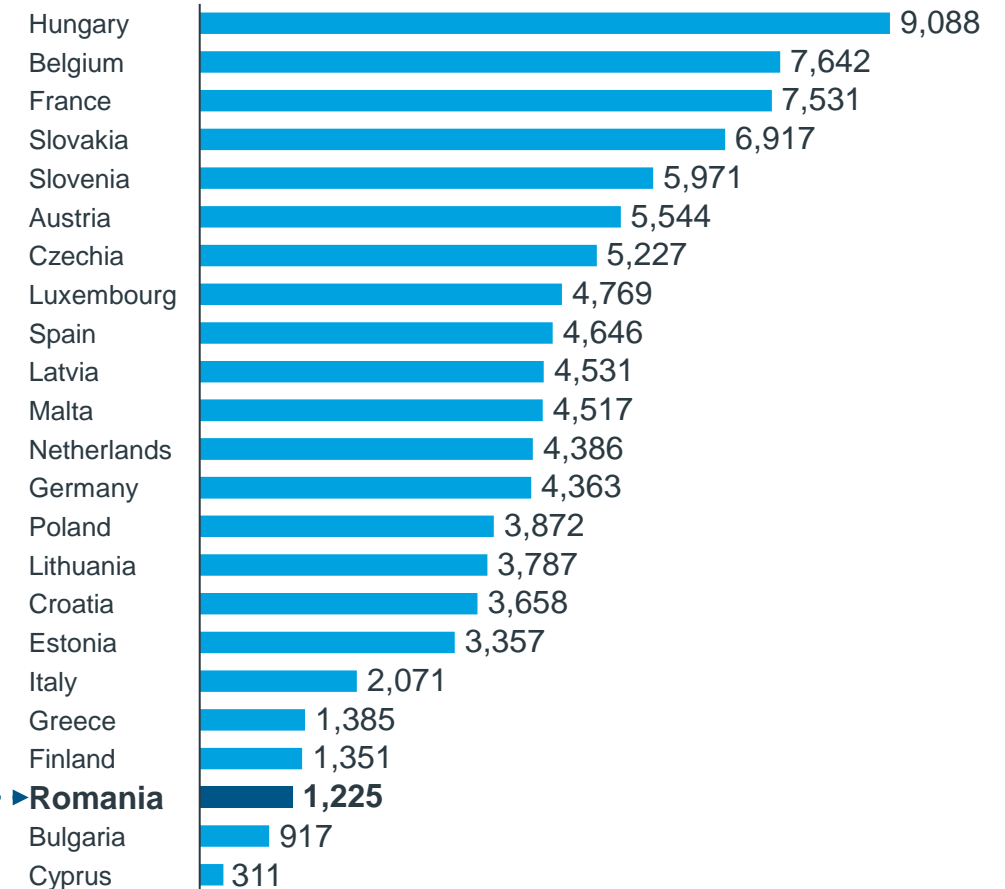
MRI units are a comparably scarce resource, however, even so have an extremely low utilization rate compared to EU countries

MedTech landscape: MRI in EU vs Romania

MRI Units per 100tsd inhabitants, 2020*



MRI Scans per machine, 2020*

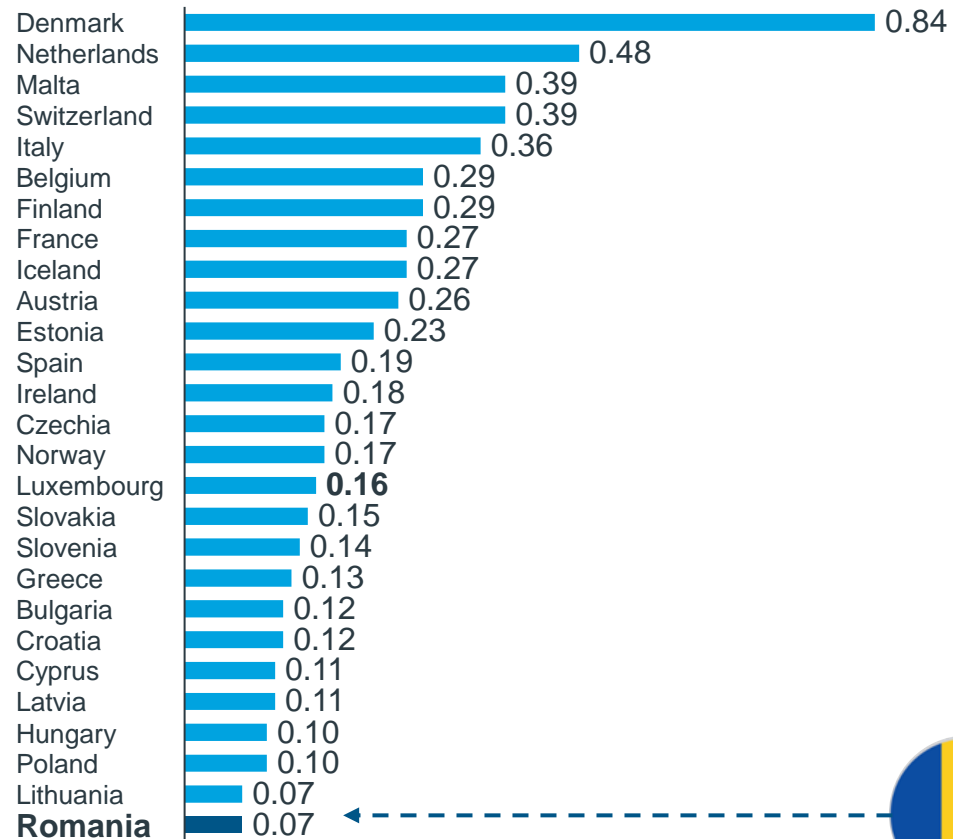


Source: Eurostat – Units in hospital and ambulatory providers
Healthcare as an Investment

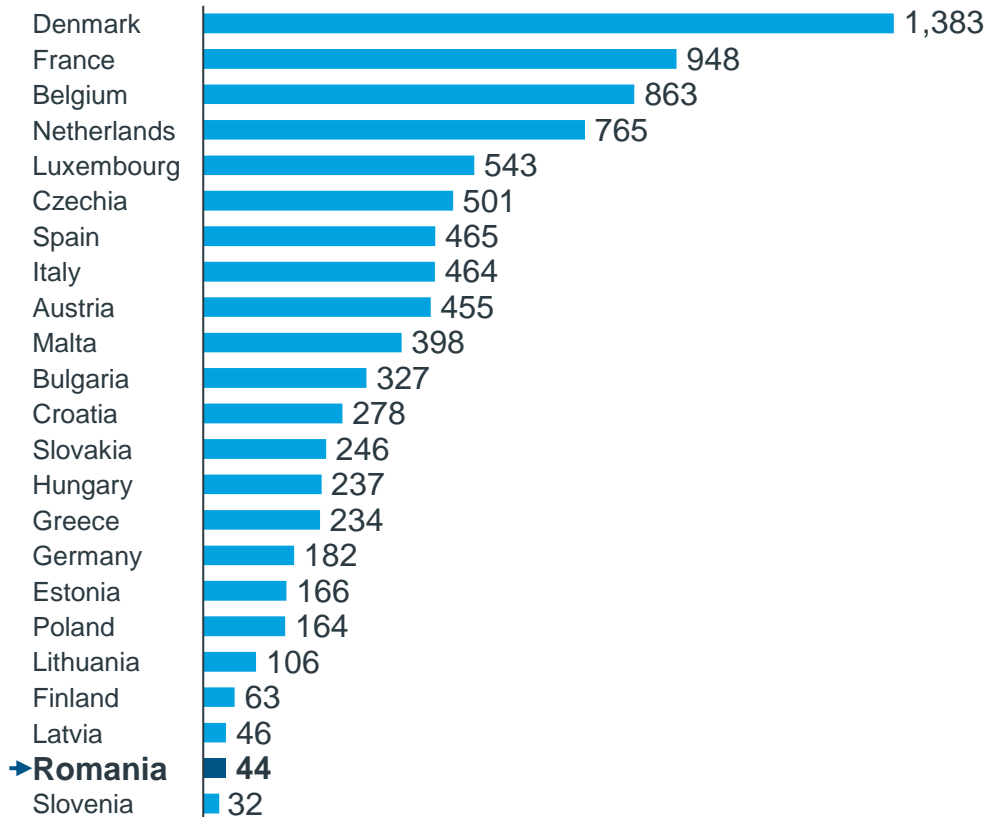
Romania has the lowest rate of PET units along with the second-lowest utilization per unit within the EU

MedTech landscape: PET in EU vs Romania

PET Units per 100tsd inhabitants, 2020*



PET Scans per machine, 2020*

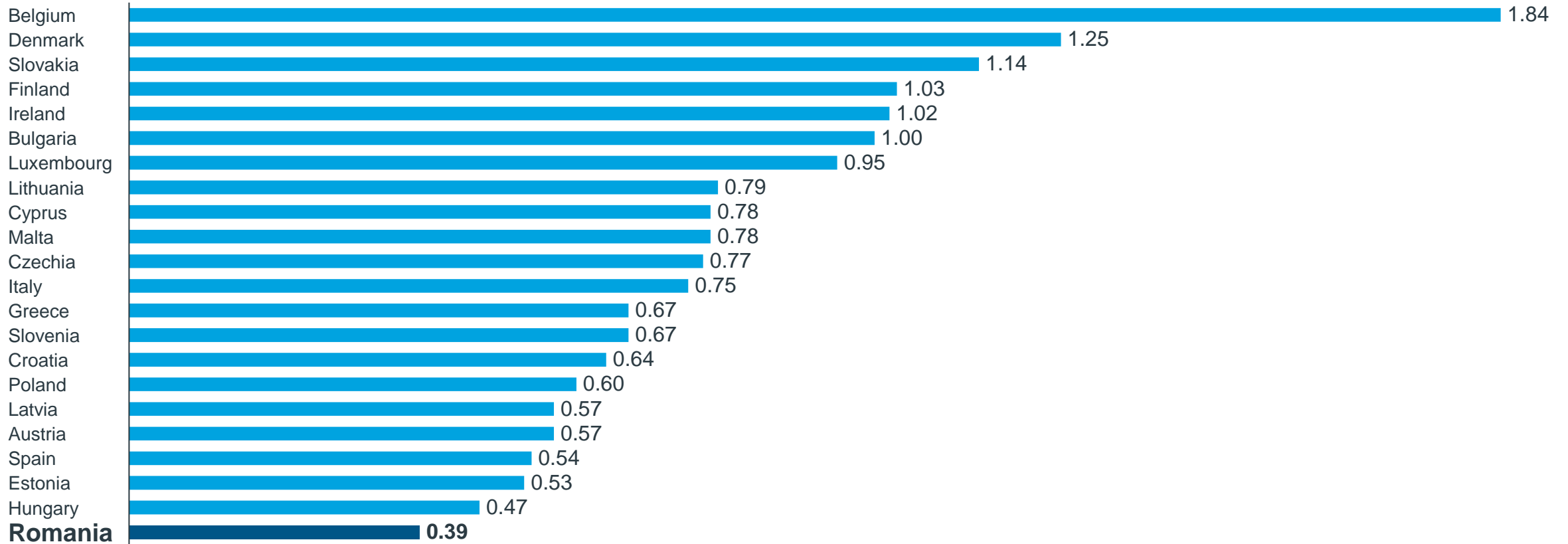


Source: Eurostat – Units in hospital and ambulatory providers

Romania has the lowest rate of radiotherapy units per 100 thousands inhabitants

MedTech landscape: Radiotherapy in EU vs Romania

Radiotherapy Units per 100tsd inhabitants, 2020*




Source: Eurostat – Units in hospital and ambulatory providers


In the UK, country-wide mandatory costing mechanisms incentivize hospitals to gain transparency and drive value


Study Case: Gaining cost transparency in UK (1/3)




All NHS trusts
need to comply with a
yearly cost
collection
based on pre-outlined
costing guidance

 Transition from using reference costs to a hybrid of patient-level cost and aggregate cost collection, to reach a full patient-level cost collection over the next years

 Support the development of new models of care and reduce variation in the use of resources

 Benchmark healthcare providers

 Use collected data, on both national and provider levels, to:

- identify operational and clinical efficiencies
- inform the national tariff and other pricing discussions
- inform the relationship between provider characteristics, patient characteristics and cost

Bringing transparency and analytics into the spending will help further optimize the costs

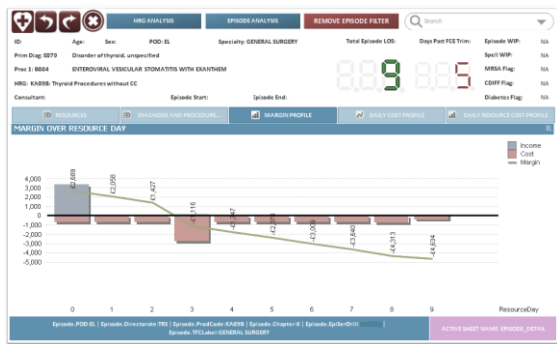
Study Case: Gaining cost transparency in UK (2/3)



Hospital costing program was deployed at over 260 NHS organizations in the UK

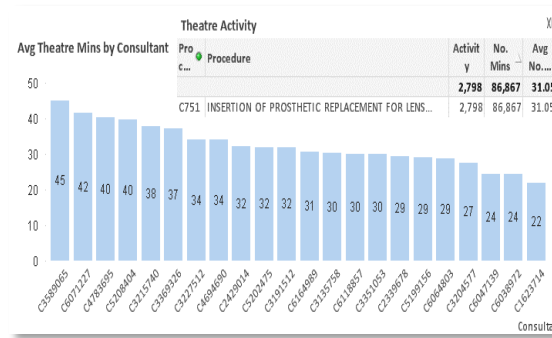
Patient level information costing system (PLICS)

- Gather and analyze patient level information
- De-compose each patient bill for each hospitalization, gaining understanding of **costs per resource groups and utilization across the stay**



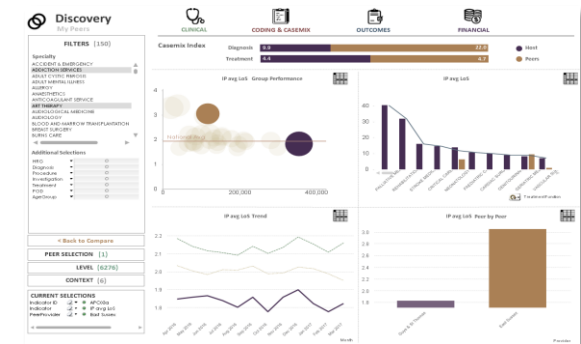
Integrated service line reporting

- Monitor the **financial efficiency of clinical decisions**
- Implement **monthly budgetary statements and service line analysis reports**
- Understand **profitability of different services** provided, possibility to drill down into details of activity by individuals



Benchmarking solutions

- Compare financial and operational activity performance with peers across the country to **identify and share clinical and financial best practices**
- Identify patient cohorts suitable for Clinical Trials



New costing program helped in improving profitability by optimizing the whole patient pathway

Study Case: Gaining cost transparency in UK (3/3)



New costing program helped in understanding the patient pathway in health care

- Patient level information costing system (PLICS) has been used to shift the costing paradigm towards a new approach that is looking at **whole pathway costs**
- The system allows for sensitivity analysis - **how increases in diagnostic costs can reduce length of stay** and improve overall profitability of the service
- Systems have been put in place to **monitor diagnostic testing**; meaningful discussion are now taking place around clinical variation

Improved discharge planning

Reduction of length of stay



Earlier diagnostic testing

The introduction of new diagnosis standard in the UK ensured faster time to diagnosis and optimized patient journey

Study Case: Faster Diagnosis Standard



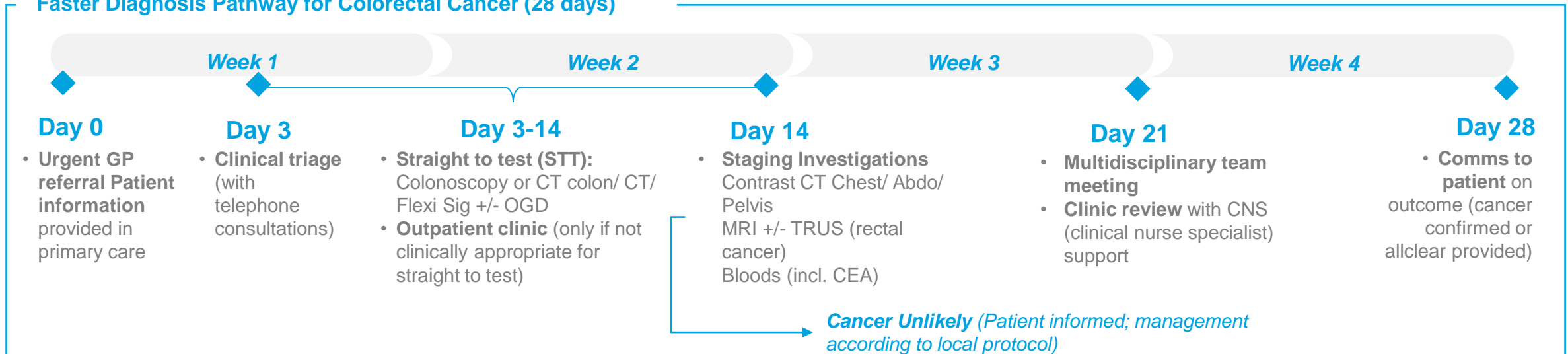
- In 2021 NHS introduced **Faster Diagnosis Standard (FDS)**
- FDS emphasizes the importance of receiving a faster diagnosis or ruling out of cancer and defines a **28 days pathway** to make this possible
- **64% of patients** have been diagnosed or had cancer ruled out within 28 days of an urgent suspected cancer referral*



Benefits of the **Faster Diagnosis Standard**:

- **Patients** – more information, better patient experience, reduced anxiety and potential for improved survival
- **Clinicians** – collaboration between primary and secondary care to ensure high quality referrals into a streamlined service
- **Systems** – reduced demand in outpatient clinics, reduced delay in care, improved performance

Faster Diagnosis Pathway for Colorectal Cancer (28 days)



* Results by January 2022; OGD - Oesophago-Gastro-Duodenoscopy
Source: NHS, Cancer Research UK
Healthcare as an Investment

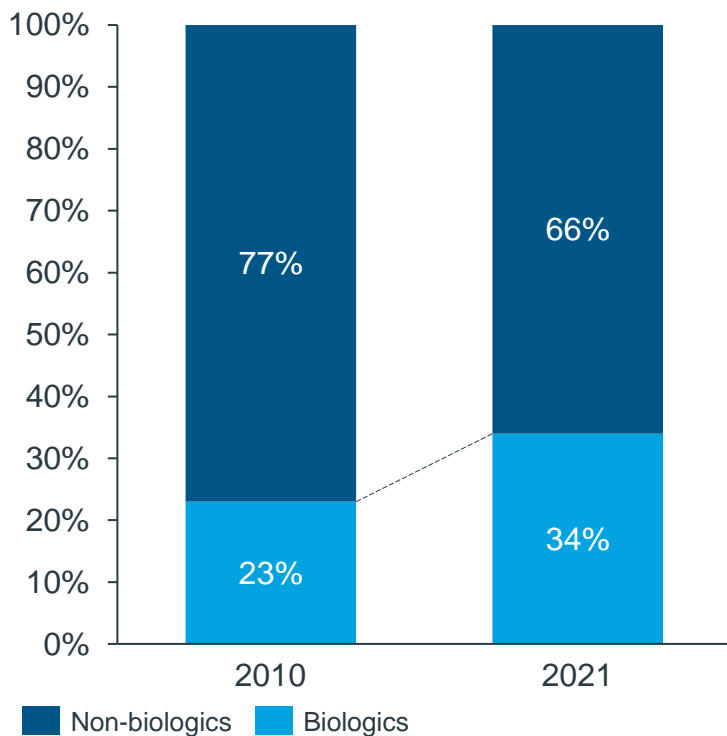
Loss of exclusivity potential and horizon scanning of innovative medicines



LoE forecast and the savings potential it will generate are about to have a paradigm shift in the upcoming years

Loss of exclusivity analysis (1/2)

EU Spending, Share of total EU RX market (%)

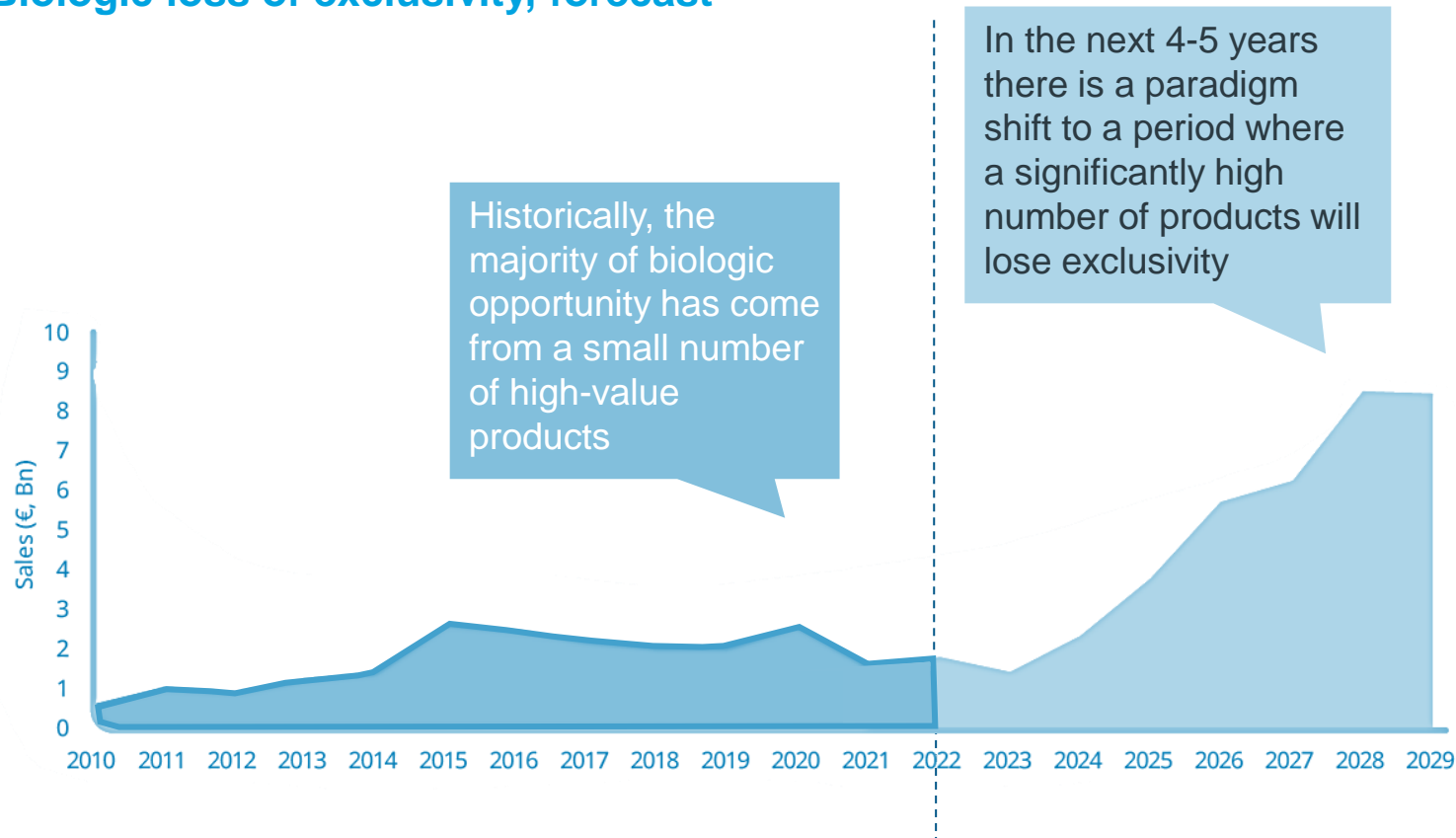


* Rx Biologics in 23 European countries

Source: IQVIA

Healthcare as an Investment

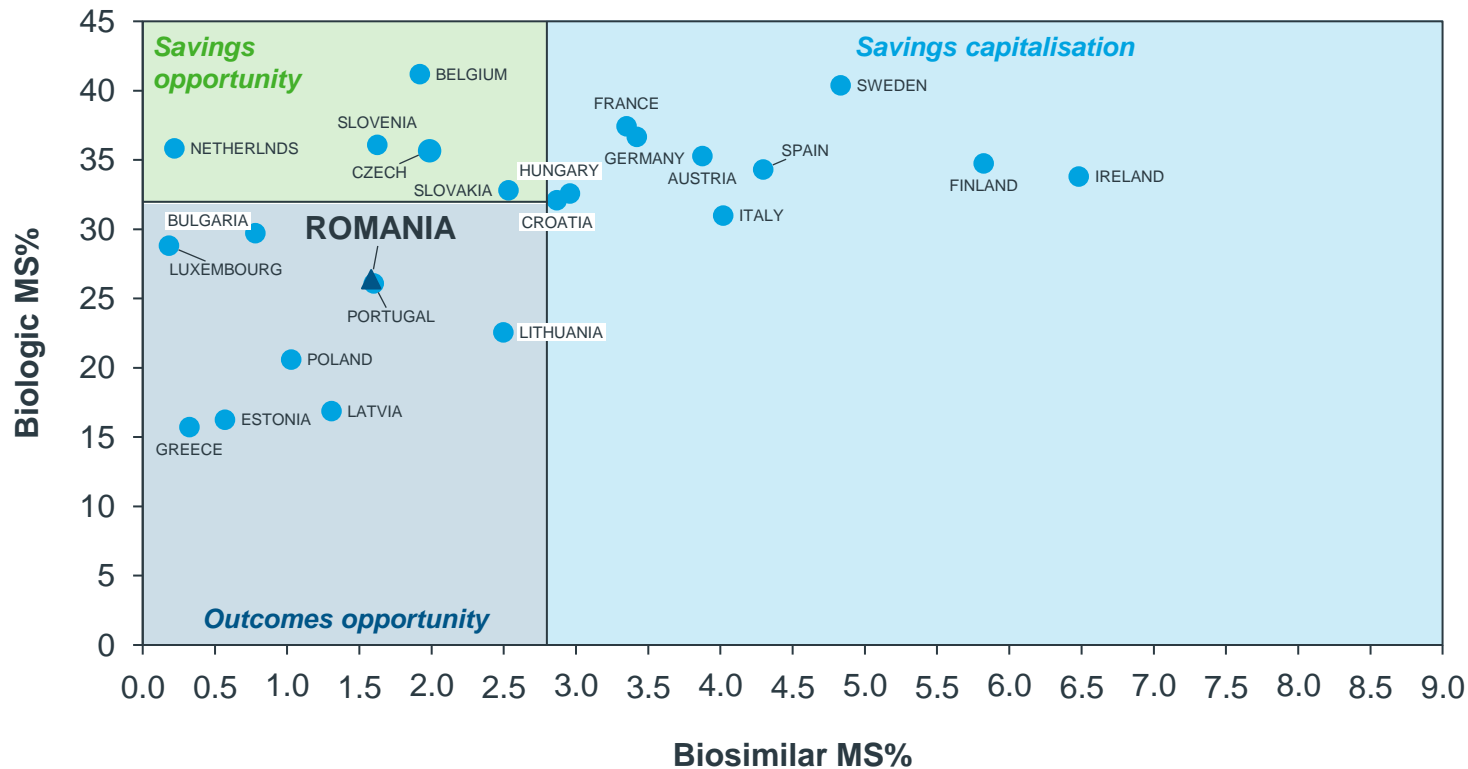
Biologic loss of exclusivity, forecast*



In the 5-year horizon, there might be significant savings opportunities to be capitalized for Romania

Loss of exclusivity analysis (2/2)

EU usage of biosimilars in 2021



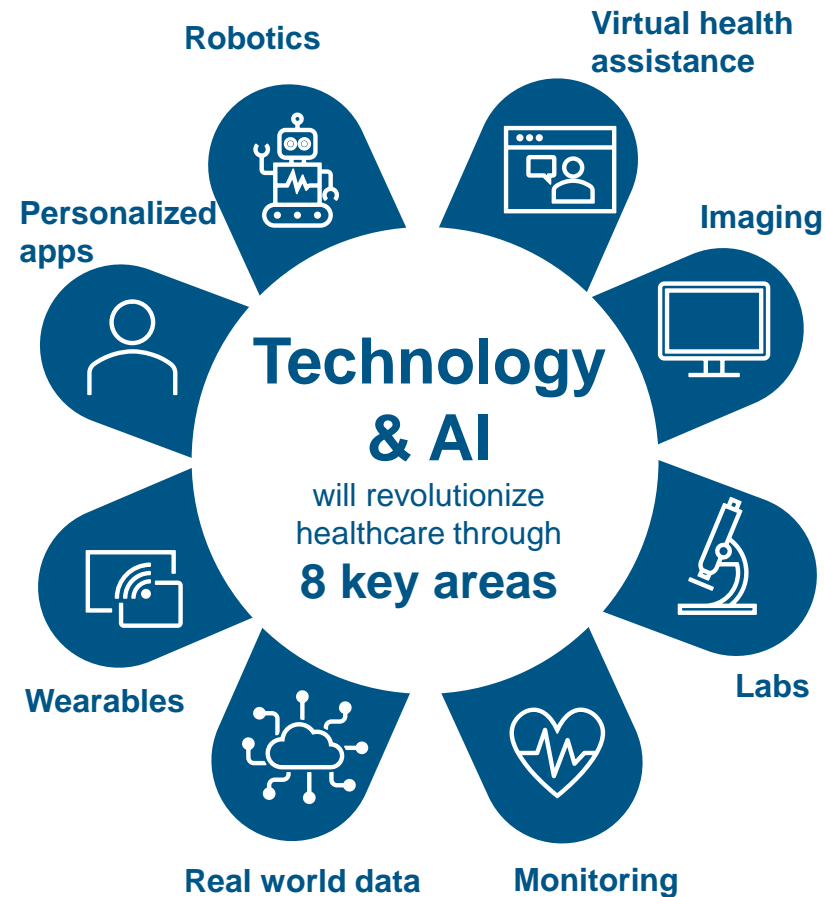
- Romania has a substantial growth in the use of biologic medications in the recent years (over 25% market share in 2021), while Biosimilar adoption remains one of the lowest within the EU
- If this growth continues, it is important to keep track of potential loss of exclusivity expected in the upcoming years
- In the 5-year horizon, there might be significant savings opportunities to be capitalized

Note: No data available for Cyprus, Denmark and Malta. Estonia, Greece and Luxembourg markets are retail-only, while the Netherlands market is hospital-only. MS - Market share

Technology driven cost effectiveness

Enabled by technology and AI, savings could also be realized through improved efficiency and HCP capacity

Technology and AI impact in EU



Potential impact of Technology and AI in European health systems



€ **€171- € 212bn**
in annual savings*

380k-403k lives can be potentially saved annually

1.7-1.9mn hours could be freed up every year

To unlock the full potential of technology and AI, European health systems need to make improvements in a number of areas:

- **Data** – improve data quality, privacy and interoperability to enable technology
- **Legal and regulatory** – guidance on applying and interpreting existing regulation to include technology considerations and novel approaches to meet requirements
- **Organizational and financial** – substantial investment for infrastructure, digitalization adoption, technologies, training, etc.

*including the opportunity costs of HCP time
AI – Artificial intelligence

A UK-based study highlights the cost-effectiveness benefits of implementing a centralized RARP in localized prostate cancer

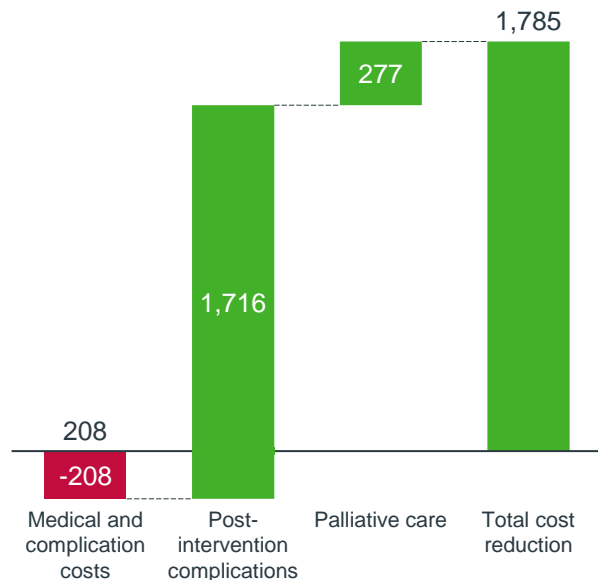
Case Study: Cost-effectiveness of Robotic-Assisted Radical Prostatectomy (RARP) in UK



Impact of Robotic-Assisted Radical Prostatectomy (RARP) in localized prostate cancer

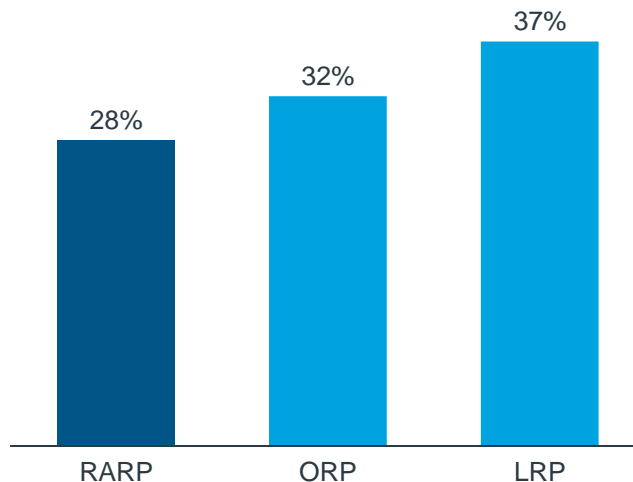
Improved cost-effectiveness

Cost effectiveness RARP vs. LRP per patient (£)



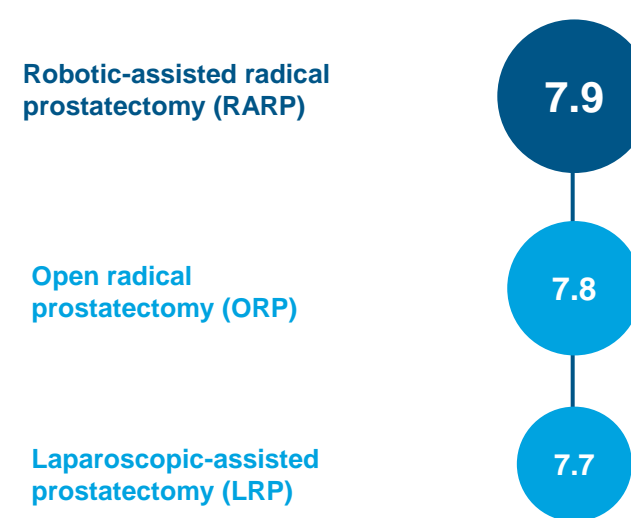
Lower BCR

Biochemical recurrence risk RARP vs. ORP and LRP



Increased QALY

Quality-adjusted life-years of RARP vs. ORP and LRP



Note: RARP- Robotic-Assisted Radical Prostatectomy; LRP- laparoscopic-assisted prostatectomy; ORP - open radical prostatectomy; BCR - Biochemical recurrence risk; QALY - Quality-adjusted life-years

Source: Cost-effectiveness of Robotic-Assisted Radical Prostatectomy for Localized Prostate Cancer in the UK, 2022

Healthcare as an Investment

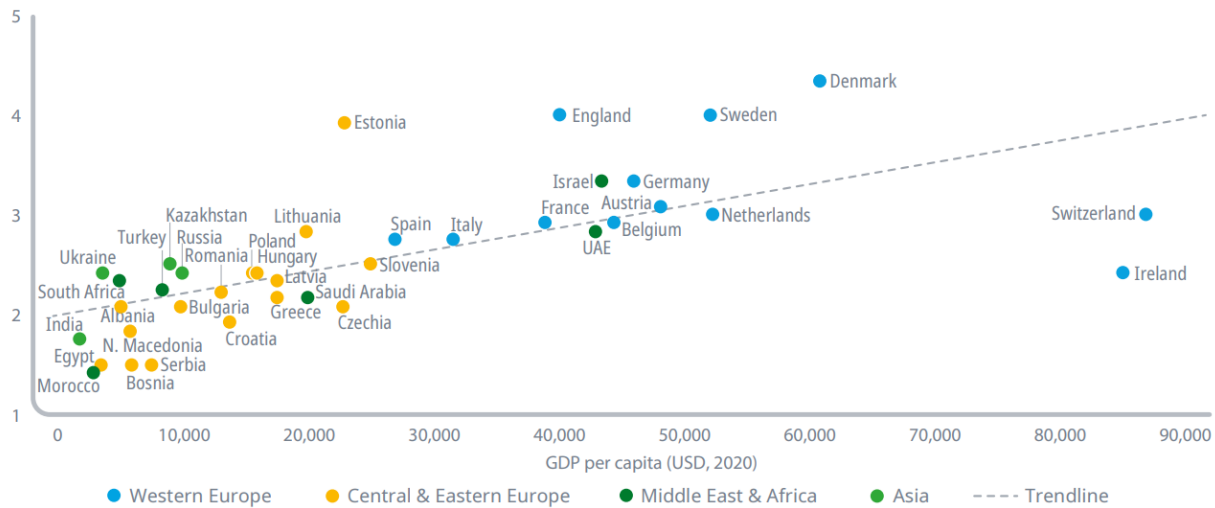
Digitalization possibilities in healthcare and cost-savings potential



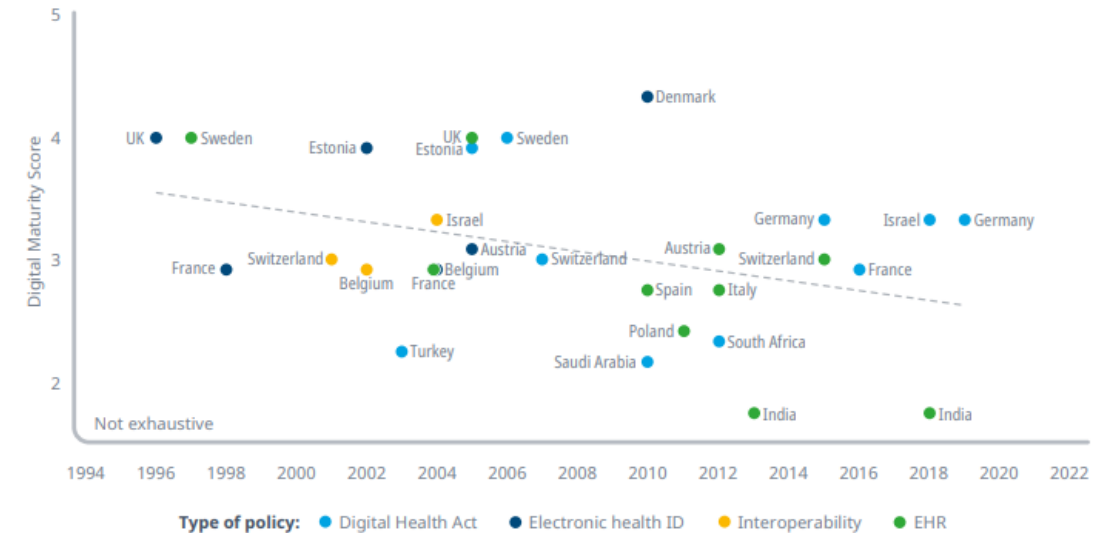
Romanian digital health system seen as “underdeveloped and challenged”, falling behind Western Europe

Romania digital health system maturity score

Digital health system maturity scores*, 2020



Introduction of notable digital health policies, 2020



- Romania has a digital maturity score of 2.1 out of 5 and falls behind Western Europe
- There is a higher proportion of dedicated laws on Digital Health being passed across Europe in recent years, but **NO policies around digital health act, electronic health ID, interoperability or electronic health records (EHRs)** have been passed in Romania
- Large scale digitization requires strong cultural, political, economic and regulatory environments to establish well-funded and trusted frameworks

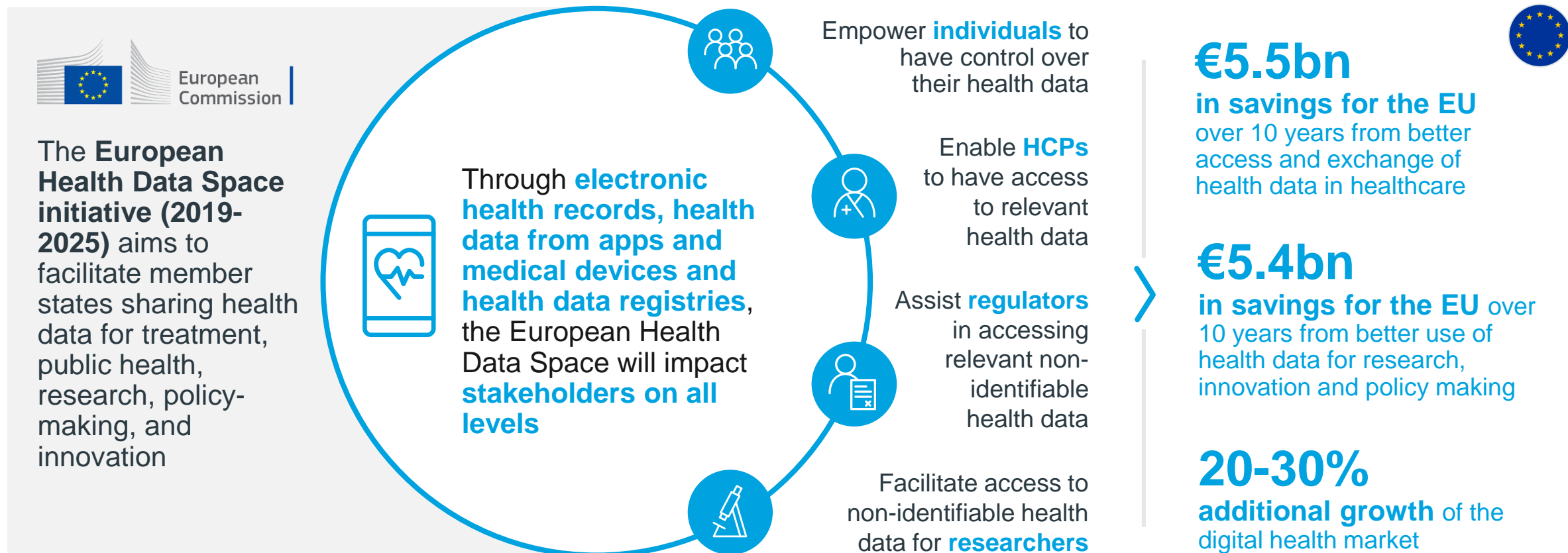
IQVIA uses a maturity framework that considers the wide-ranging nature of health systems, from a country's Initiatives through to its Infrastructure and Implementation. Scoring methodology: Internal IQVIA experts were interviewed and surveyed on a quantitative and qualitative basis on 12 elements of a digital health system (policy, funding, data governance, institutions, EHR, data standards, interoperability, omics, telehealth, artificial intelligence, information use, virtual studies). The average of all 12 elements constitutes the country's overall Digital Health System Maturity Score.

Source: IQVIA Consulting, IQVIA 2021 White Paper "Switching on the Lights"

Healthcare as an Investment

The European Health Data Space initiative aims to facilitate sharing of health data and provides guidelines for healthcare system design

European Health Data Space initiative



As an EU Member State, Romania can more closely align with the European Health Data Space initiative to strengthen its health data ecosystem and accelerate interconnectivity with other Member States and unlock the growth and savings potential

Digitalization in healthcare can be an enabler to save costs, improve treatment access and gain effectiveness

Digitalization initiatives and their benefits



E-prescription

- Saving costs and time on both the patient and doctor sides
- Transparency and data collection



E-referral

- Ease of access to specialists
- Re-focusing GPs and primary care's visits, allowing for better outpatient and reduced inpatient care



Telehealth

- Ease of access otherwise difficult due to regional disbalance and/or scarce resources; Healthcare access in the pandemic context
- Management and regular check-up of chronic illness



Electronic patient record

- Better accessibility and quality of the full patient history
- Clearer patient pathway



Data analytics

- Identification of high-risk patients
- Prevention of diseases using predictive analytics
- Cost-savings and efficiency gains through patient pooling and analysis



Remote monitoring and sensors

- Keeping track of chronic illnesses
- Reducing amenable mortality rates

Digitalization in healthcare will lead to:

- Better health policy and evidence-based policy making
- Better diagnosis and treatment
- Higher patient adherence to medication and treatments
- Improved patient safety
- Continuity of care and improved healthcare efficiency
- Greater opportunities for R&D

Digital healthcare is dependent on the presence of 5 core pillars and further work is needed in Romania

Digital healthcare pillars



Strategy design

- Identification of healthcare needs & requirements
- Definition of what the full spectrum of digital healthcare should include (short- mid- and long-term)
- Definition of Data sources and outputs and analytics
- Involvement of key strategic stakeholders
- Design of the overall Digital roadmap until 2030



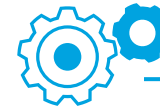
Legislative basis

- Introduction of electronic patient record and its role in healthcare
- Legal changes which describe rights & responsibilities and set the IT framework
- Data protection and data ownership rights
- Revision of existing legal texts to ensure compatibility/consistency



IT infrastructure

- Overall technical infrastructure
- Data Warehouse and Data Lake
- Software backbone
- Database definitions and standards
- Cloud Database
- Data encryption and anonymization
- Peripheral tools/hardware (e.g. plastic cards, readers, etc.)



Systems integration

- Interfaces between various systems & databases
- UIDs to ensure data matching
- Clarification of ownership & responsibilities
- Interoperability - Enhanced tech capabilities to support interoperability of systems; international consensus on formats to be adopted



Education

- Continuous educations for healthcare professionals; training and retraining
- E-learning
- Clinical guidelines updates to include digital solutions



While some initiatives are already in place, a successful implementation requires a comprehensive effort as combination of all pillars, **combined with information and educational campaigns to foster effective adaptation**

Optimized funding models






There are also a number of options to reform the overall healthcare funding model in the long run

Summary

There are several options to reform the overall healthcare funding model in the long run



Public vs. private funding model

- Pressure on healthcare funding is not only a challenge for Romania – various examples exist of how other countries are addressing it:
 -  Multiple public & private players
 -  Fully private system
 -  Private complements public payer



Innovation funds

- Introduction of a dedicated fund for innovation in healthcare could ensure faster and easier market access
- Innovative funds can be targeted at:
 - All innovative medicines/ medical devices
 - Certain therapeutic areas
 - Selected patients



EU funds

- Leverage EU funds to finance structural reforms:
 - Latest COVID-19 related **recovery and resilience package**: one-off opportunity of **EUR 2.5bn** for Romania
 - **EU4Health** fund - **EUR 5.1bn** to EU member states




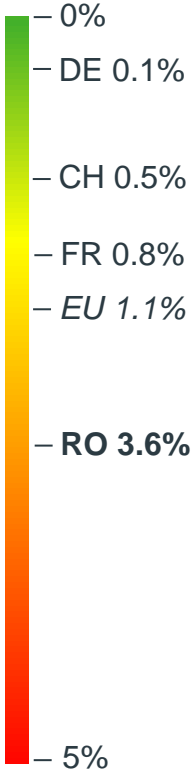


Additional funding sources

- Encourage additional funding sources for financing health, e.g.:
 - Voluntary health insurance
 - Medical subscriptions
 - Copayment
 - Health savings account
 - Contributions exemption readjustment

Public vs. private funding model

Pressure on healthcare funding not only a challenge for Romania – various examples exist of how other countries are addressing it

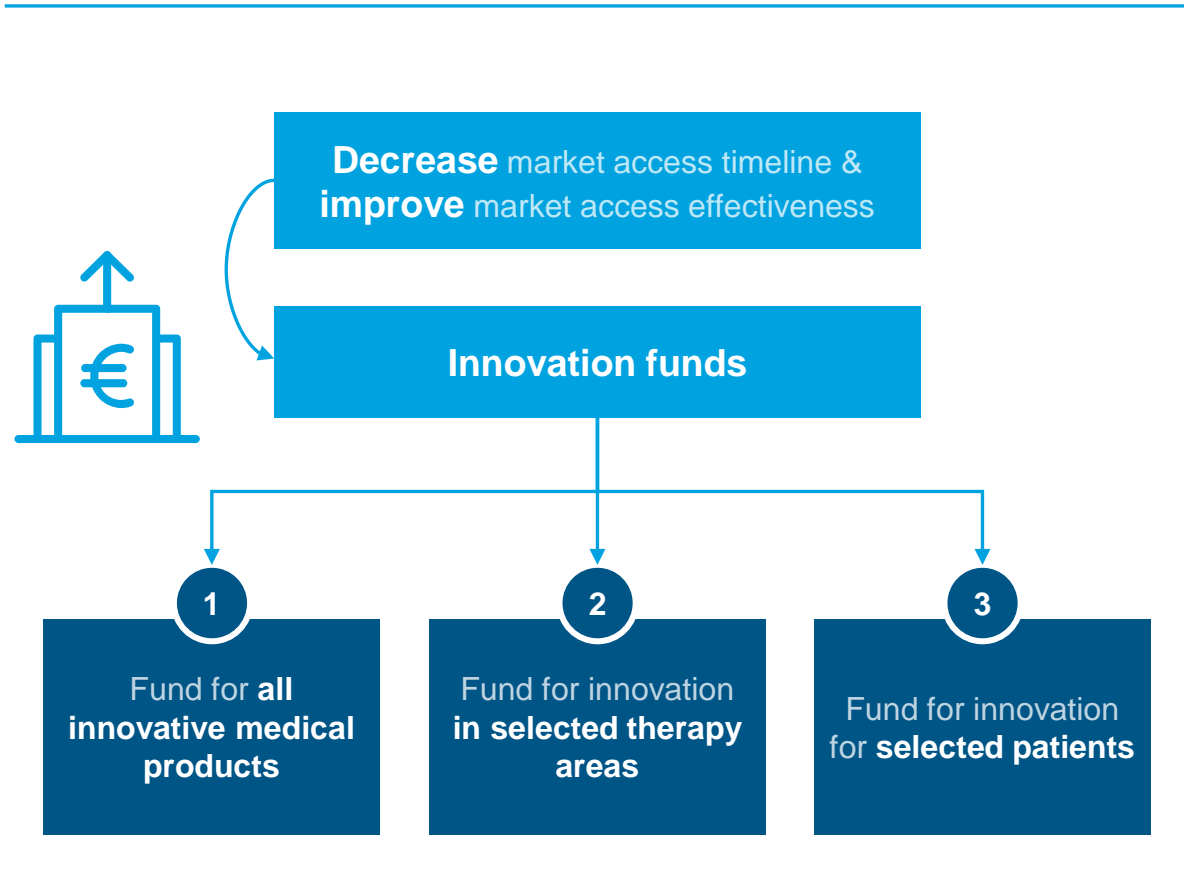
Examples of funding models in other countries

Country	Payer type	Response to funding challenges	Accessibility	Unmet needs
	Multiple public & private payers	<ul style="list-style-type: none"> A large number of private and public payers introduced Patients can choose between private and public (once private, difficult to go back to public) Payment system reformed to close inequalities between private & public as private patients used to be more profitable for doctors 	<p>Germany records 0.5% of unmet needs</p> <ul style="list-style-type: none"> ✓ Patients have a right to choose payer (private or public) × Preference of private patients over public 	
	Fully private system	<ul style="list-style-type: none"> Via mandatory health insurance, patients have direct access to all levels of care with minimal waiting times Payment contributions determined by private market Government closely regulates system & subsidizes healthcare for low-income people to ensure accessibility 	<p>Switzerland records 1.3% of unmet needs</p> <ul style="list-style-type: none"> ✓ All citizens have access to private healthcare × Mandatory higher taxes 	
	Private complements public payer	<ul style="list-style-type: none"> Private insurance introduced to complement public one – extra funding for the system Employers contribute additionally to private system Unemployed or socially disadvantaged people still guaranteed access to healthcare 	<p>France records 1% of unmet needs</p> <ul style="list-style-type: none"> ✓ All citizens and foreigners have access to healthcare × Long waiting times 	

Innovation funds

Introduction of a dedicated fund for innovation in healthcare could ensure faster and easier market access

Types of innovation funds and funding possibilities



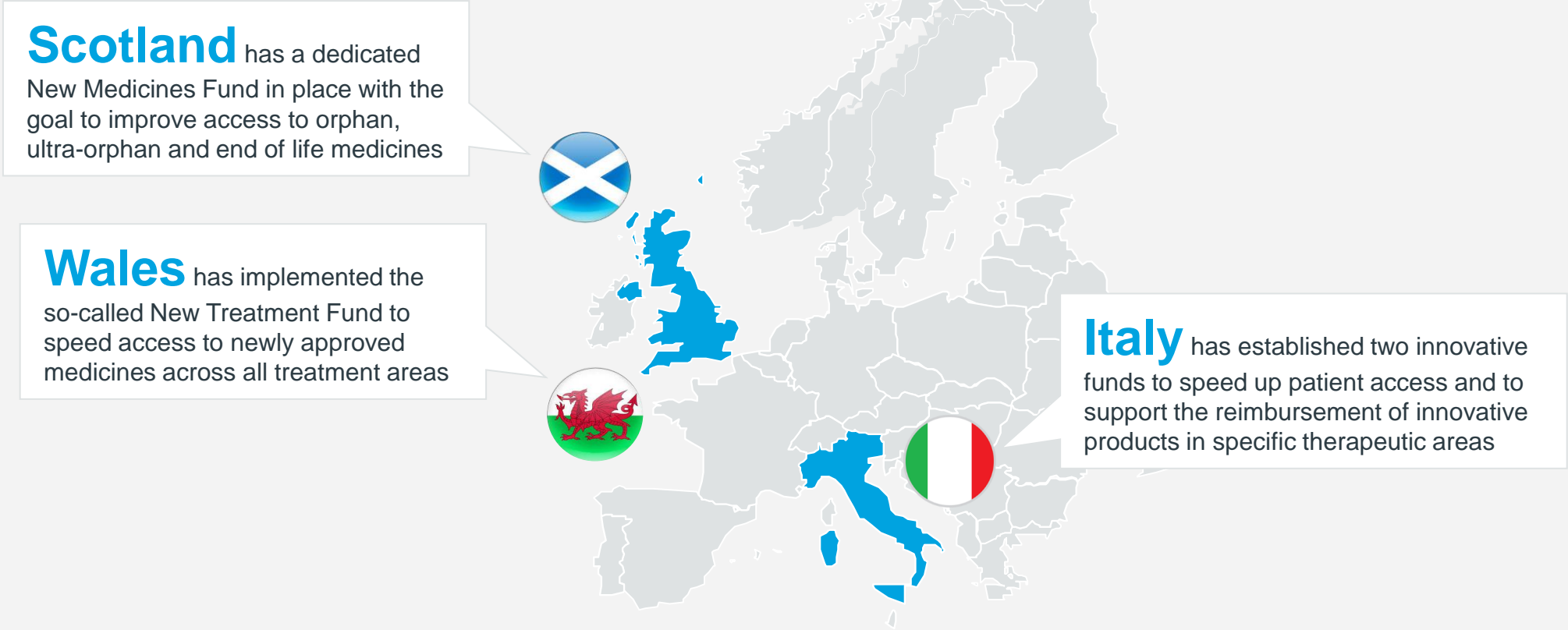
Possible funding sources for innovative funds

- └ Dedicated governmental funds
- └ EU recovery funds



Several countries across Europe serve as an example of successfully introduced innovation funds in the last years

Innovation funds in place



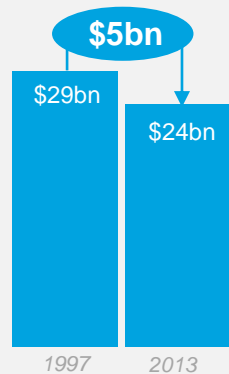
Funding can be generated through reallocating state contributions or portion of overall dedicated resources to health

Innovative funds in place

Innovation has the potential to bring substantial cost savings & better patient outcomes

And innovative funds can unlock those by speeding access to newly approved innovative therapies

New cancer drugs in the US between 1997-2013 reduced the amount of days spent in hospital and thus the **cost of treatment by \$5bn**



The development of **statins to treat high cholesterol** was estimated to reduce 28k deaths and 41k heart attacks in 2008 across Europe



	Wales	Italy	Scotland
Purpose	Wales has the New Treatment Fund in place, to speed access to newly approved medicines	Italy has established funds to speed up patient access and to support the reimbursement of innovative products	Scotland created the New Medicines Fund to improve access to orphan, ultra-orphan and end of life medicines
Drugs covered	All new therapies	Mainly dedicated to HCV products and oncology products	Licensed orphan, ultra-orphan and end-of-life medicines
Time	From 2017 to 2021	From 2015 - 2019	From 2015 to 2018
Funding	£80M over the course of 5 years, on top of the provisional budget for the NHS Wales	€500M initially powered by a state contribution and a portion of the resources of the National Health Plan and another €500M as portion of National Healthcare spend	Funded through a portion of the rebate to the Scottish Government made by the Pharma Companies. Allocated funding was £138M

Note: HCV - Hepatitis C virus; AIFA - Italian Medicines Agency

Source: IQVIA; Lichetnberg - How cost-effective are new cancer drugs in the U.S.?; Grabowski- The large social value resulting from use of statins warrants steps to improve adherence and broaden treatment
Healthcare as an Investment

Recovery plan and EU budget

Multiple EU funds are available in the next 5 years with companies, governments & other organizations eligible to receive to receive them

EU funding packages

EU Centralized Funding Sources

EU4Health



Timeline:
2021-2027



Budget:
€5.1bn

Focus areas:

- Strengthening preparedness and response capabilities
- Prevention & health promotion in an ageing population
- Digital transformation
- Vulnerable groups access to care

Horizon Europe – Health Cluster



Timeline:
2021-2027



Budget:
€8.2bn

Focus areas:

- Innovative Health initiative
- Global health partnership
- Chemical risk assessment
- ERA for Health
- Rare diseases
- One-Health anti microbial resistance
- Personalized medicine
- Pandemic preparedness

Allocated Funding Sources for Romania

Recovery and Resilience Plan



Timeline:
2020-2026



Budget:
€2.5bn for Health

Focus areas:

- Investing in modern hospital infrastructure to ensure patient safety (Economic and Social Resilience pillar; 2bn)
- Cover the development of an integrated e-Health system (Digital Transition pillar; 470mn)

Health Operational Program



Timeline:
2021-2027



Budget:
€4.1bn

Focus areas:

- Regional hospitals
- Cancer treatment
- Population screening
- Critical patients with acute cerebrovascular pathology
- Neonatal critical patient
- Cantacuzino Institute
- Genomics
- Early diagnosis & treatment
- Rare pediatric neuro diseases
- Measures for early diagnosis /treatment antenatal neonatal postnatal
- National Observatory for Health Data
- Resizing and standardizing CNAS IT system



Additional funding sources



There are also a number of additional mechanisms for financing health care expenses

Additional funding sources

Contributions

Adjusting the current exemptions model for health contributions



Medical Subscriptions

Expanding the use of medical subscriptions



Health Savings Accounts (HSA)

Introducing special savings accounts held by an individual to be used for medical expenses



Voluntary Health Insurance (VHI)

Expanding the use of Voluntary Health Insurance



Copayment

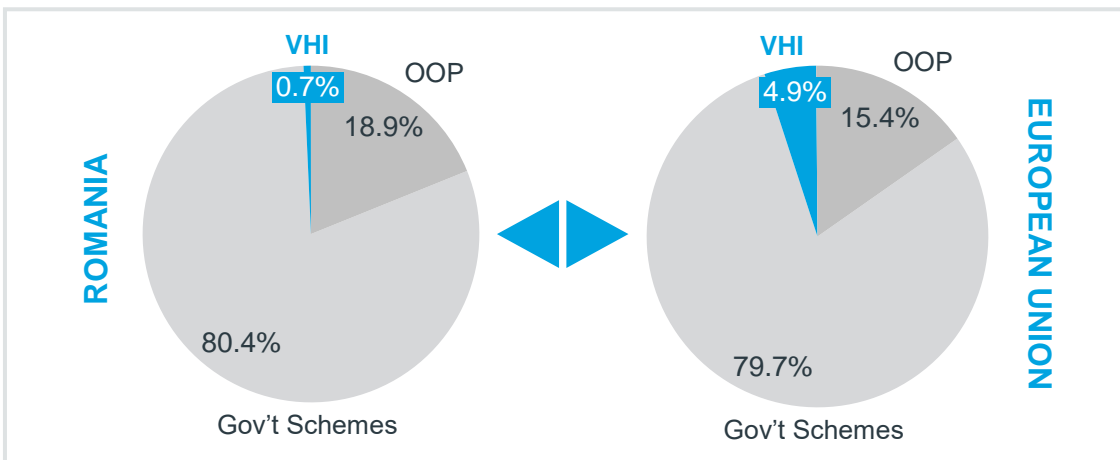
Introducing personal contributions to compensate the difference between the actual value of the medical service and the amount reimbursed by the FNUASS



The voluntary health insurance and the health savings accounts have been continuously growing across Europe and the US

Voluntary Health Insurance & Health Savings Accounts

VOLUNTARY HEALTH INSURANCE (VHI)



- › While VHI expenditure in Romania is very limited (**0.7%**), it has been growing; according to a recent survey* nearly **40% of respondents said that they are more interested in VHI**
- › In most EU countries, VHI plays a marginal role but it's share in total healthcare spending in EU has grown in the past years, up to 5% in 2019. Globally, there are 41 countries recording a VHI share above 5%

*UNRAR-IRES survey titled Risk perception and insurance culture in Romania, conducted in May 2022 among 1,000 respondents aged 18 to 50, using the CATI (Computer Assisted Telephone Interviewing) method
Source: OECD, WHO, UNRAR (The National Assoc. of Insurance & Reins. Companies in RO), IRES (RO Instit. for Evaluation & Strategy), Devenir Research

HEALTH SAVINGS ACCOUNTS (HSA)

Case Study: HSAs in the United States (2021)



30mn HSA accounts » **63mn** people covered » **\$82bn** assets held

Tax fillers with income above \$200,000 are... **10x** ... more likely to claim tax benefits under HSAs

- › **Health Savings Accounts (HSAs)** are special savings account held by an individual used for medical expenses and can be 100% tax deductible up to a maximum amount set by law
- › HSAs have been implemented in China, Singapore, USA and South Africa with varying results and remain more attractive to wealthier individuals
- › HSAs **may not be feasible** in countries where the unemployment rate is high and savings rates and average earnings are low

Role of the industry as key contributor

The industry also stands firmly as a partner in the process and is ready to contribute to the change

Summary

The industry also stands firmly as a partner in the process and constantly contributes through:

Direct contribution to public spend



Pharma and medical devices companies represent **29% of total health spending** in Romania

Employment creation



More than **369,000 people** are currently employed in healthcare in Romania
35.000 people are employed by the pharma industry in Romania

Clinical trials contribution



Close to **EUR 72mn** market value of CT

& EUR 19.7mn direct contribution to the state budget



690 CTs started in 2015-2019

8,988 patients enrolled only in one year (2019)

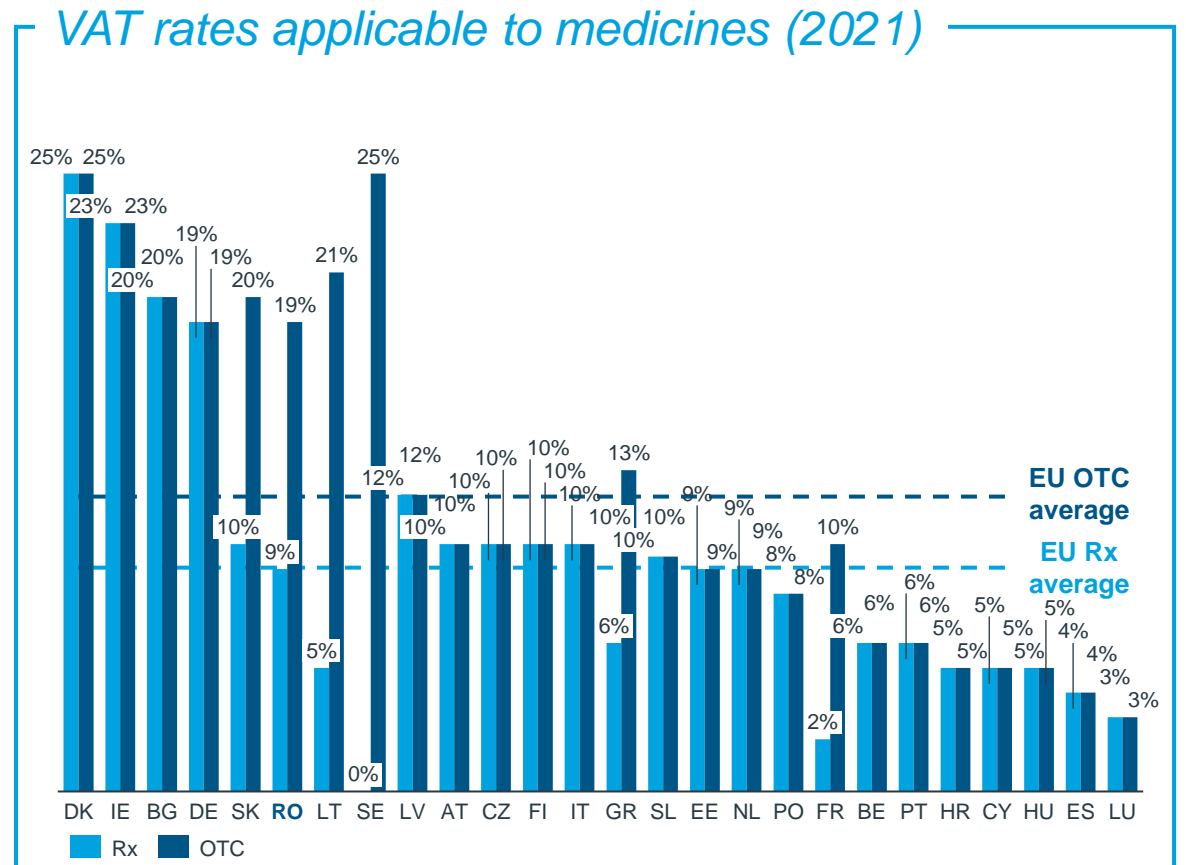
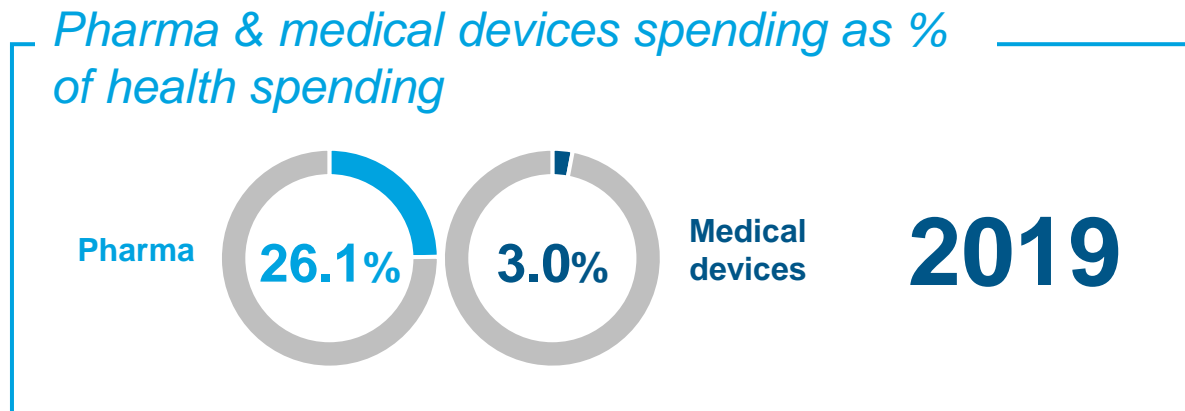
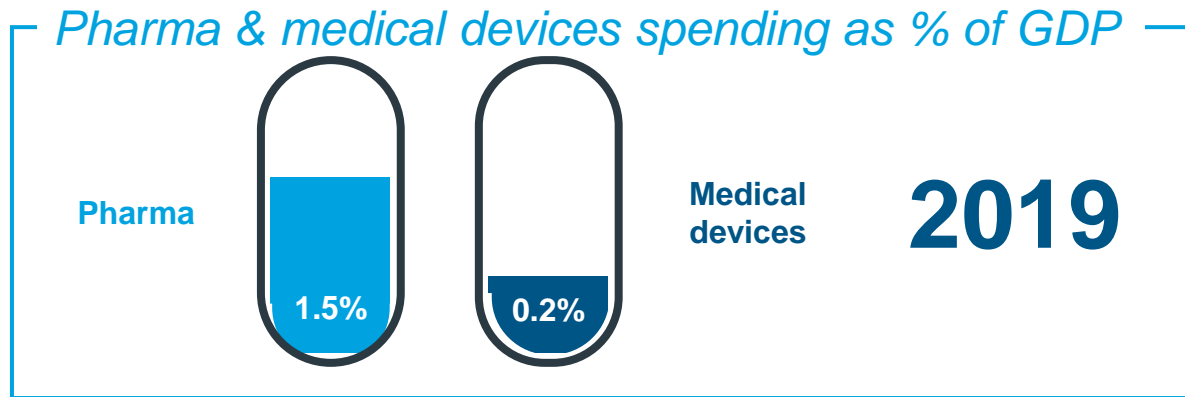
CTs market expected to achieve **higher future growth** and larger patient pool as a result of recent legislation update

CTs additional impact through:

- giving access to patients to latest innovative therapies
- creating employment, educating & retaining talent
- creating additional income for doctors
- generating tax contributions to the state budget
- technology transfer and know-how sharing

Pharma and medical devices companies represent 29% of total health spending in Romania

Direct contribution to public spending



Sources: OECD Pharmaceutical spending 2020, The Pharmaceutical Industry in Figures 2021, Exort.gov
Healthcare as an Investment

Conducting CTs contributes greatly to healthcare system bringing benefits such as cost reduction and treatment access

Clinical trials contribution (1/2)

➤ **98 Clinical trails**
were initiated in 2019

(692 were initiated in 5 years, 2015-2019)

➤ **8,988 patients**
to be enrolled in Romanian CTs,
started in 2019

➤ **9.4 mn EUR**
savings to NHIH thanks to

4,543 patients with CVD and oncological diseases which received free of charge treatment through CTs for the studies started in 2019

➤ **341.000 EUR**
economy achieved to NHIH thanks to

6,561 patients tested free of charge through CTs for the studies started in 2019



Access to higher quality treatment for patients (innovative molecules)



Access to high quality paraclinical investigation for patients



Contribution to the public healthcare system (reduction of the NHIH reimbursement costs)



Education and professional development



Contribution to the economy (including related taxes)



Technology transfer and know-how sharing



Employment opportunities



Increase of public hospital funds



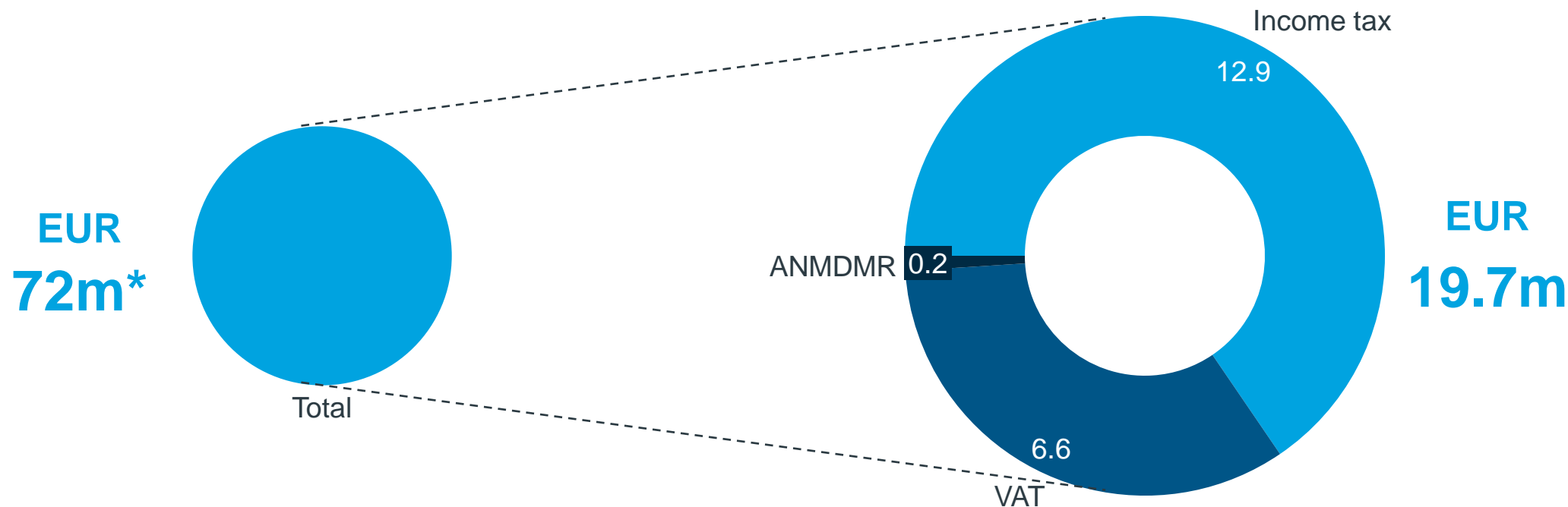
Retention of medical personnel

The clinical trials industry contributes over a fourth of the generated revenues directly or indirectly to the state budget

Clinical trials contribution (2/2)

Estimated market value of clinical trails, 2019, EURm

Estimated contribution to the authorities / state budget, 2019, EURm



Note: The total healthcare R&D value in 2019 is 75 million euro (EFPIA report) ; ANMDMR - The national agency for medicine and medical devices

Source: IQVIA analysis and estimations based on market insights, clinicalstudies.gov, ANMDMR - public reports, CRO public financial statements (latest published 2018)

Moreover, the size and development of the industry leads to growing employment

Employment creation



more than

369.000 people

are health medical staff employed in Romania*

and

35.000 people

are employed by the pharma industry in Romania



The employment of highly skilled workers in the pharma sector also leads to **higher tax contributions**

- All functions within pharma companies
- Clinical research organizations
- Pharmaceutical distributors

Call to action

We have identified 11 calls to action focusing on policy efficiency, cost optimization & funding options

Summary of Calls to Action

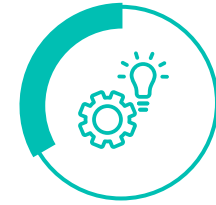
Policy Efficiency



Cost Optimization



Funding Options























- 1 **Invest in Prevention & Screening:** Make effective public health interventions to reduce risk factors and mortality rate from preventable and treatable causes
- 2 **Stabilize Workforce Dynamics:** Set-up programs to motivate young doctors to remain in Romania and to address regional disparities
- 3 **Focus on Outcomes:** Move to payment models that reward outcomes over volumes – Value Base Healthcare
- 4 **Improve Patient Adherence:** Support development of Patient Adherence Programs and introduce guidelines to improve adherence
- 5 **Advance Outpatient Care:** Strengthen provision of outpatient and ambulatory care
- 6 **Reallocate Savings from Loss of Exclusivity:** Reinvest savings from loss of exclusivity and reduce time to availability for innovative therapies
- 7 **Implement Digital Health:** Set up a Digital Health Roadmap with clear vision, priorities and milestones until 2025
- 8 **Support Better Access to Medical Devices:** Continue to implement initiatives to increase patients' access to medical devices

- 9 **Channel EU Funds in Healthcare:** Prioritize and channel investments in Healthcare as part of EU Funding: Recovery and Resilience funds and EU4Health funds
- 10 **Establish Dedicated Innovation Fund:** Launch a dedicated Innovation Fund to drive early access to innovative medicines and therapies to patients
- 11 **Support Additional Funding Options:** Support and encourage additional funding options
























Call to action (1/4)

Strategies for practical implementation of call to action

Call to action	Strategies	Implementation Effort	Impact
 1. Invest in Prevention & Screening	A Develop prevention programs and increase the level of knowledge regarding the main risk factors, involving all relevant stakeholders		
	B Develop and strengthen vaccination programs and interventions aimed at combating types of cancer that can be prevented by vaccination (HPV and hepatitis B), e.g. adequate stock supply process, improved program management, extended access to eligible groups (boys, adult women))		
	C Optimize the capacity to manage and implement existing screening programs		
	D Develop & implement comprehensive new screening programs (e.g. cancer screening; newborn screening) that ensure access to proper diagnostic tests, incentives for screening performance and a measurement of the program outcomes		
	E Implementation of interventions for faster diagnosis to shorten the initial stages of the patient's journey; e.g., interventions to strengthen the access to paraclinical investigations/tests		
 2. Stabilize Workforce Dynamics	A Provide comprehensive doctor incentives programs to practice in the under-served regions to address regional disparities		
	B Set-up shared resources centers (medical professionals) to address regional disparities		
	C Support public/private partnerships (government, academia and private companies) to invest in medical education		
	D Reassess the staff organization chart at hospital level to create new positions and attract medical workforce from the diaspora		






















Call to action (2/4)

Strategies for practical implementation of call to action

Call to action	Strategies	Implementation Effort	Impact
 <p>3. Focus on Outcomes</p>	<ul style="list-style-type: none"> A Identify and standardize outcomes that matter most to patients with a specific medical condition or in a specific segment, and define how to measure the outcomes B Invest in interoperable IT systems to capture the outcomes and benchmark the results internally/ externally and establish learning communities to share and learn C Set-up incentives and reimbursement based on the defined outcomes D Implement managed entry agreements 	   	   
 <p>4. Improve Patient Adherence</p>	<ul style="list-style-type: none"> A Support the development of Patient Adherence Programs by encouraging doctors and patients to support/enroll in such programs B Provide patients with optimal access to tests (e.g.: biomarkers, molecular tests) from public funds, to ensure that Patient Adherence Programs focus on adherence versus testing C Introduce guidelines which encourage more frequent medicine reviews to identify opportunities for reducing polypharmacy and ensuring medicines are working optimally in combination 	  	  
 <p>5. Advance Outpatient Care</p>	<ul style="list-style-type: none"> A Assess patient level costing and benchmark cost at national level, hospital levels etc. B Continue to reduce hospitalizations and reallocate inefficiently spent resources from inpatient care to outpatient care C Introduce transparent cost tracking and benchmarking among hospitals 	  	  




Call to action (3/4)

Strategies for practical implementation of call to action

Call to action	Strategies	Implementation Effort	Impact
 <p>6. Reallocate Savings from Loss of Exclusivity</p>	<ul style="list-style-type: none"> A Conduct regular horizon scan exercise to identify potential savings opportunities from loss of exclusivity of drugs B Estimate and plan potential budget impact from loss of exclusivity and reallocate the savings to innovation needs in healthcare 	 	 
 <p>7. Implement Digital Health</p>	<ul style="list-style-type: none"> A Regulate and promote the use of telemedicine and related services B Implement electronic records faster to support patient & health policy decisions aligned with the principles of evidence-based decision-making and outcome-based medicine. C Develop sets of common standards that allow the interoperability of digital systems to make health data transparent and encourage exchange of data for decision-making or R&D and innovation purposes D Modernize and operationalize the underlying systems (DES, SIUI, PIAS) to enable "value-based healthcare" E Implement patient registries to enable data access and transparency 	    	    
 <p>8. Support Better Access to Medical Devices</p>	<ul style="list-style-type: none"> A Continue the interventions that enable patients to have better access to investigations supported by medical devices B Optimize patient pathway from diagnosis to monitoring by increasing use of medical devices 	 	 

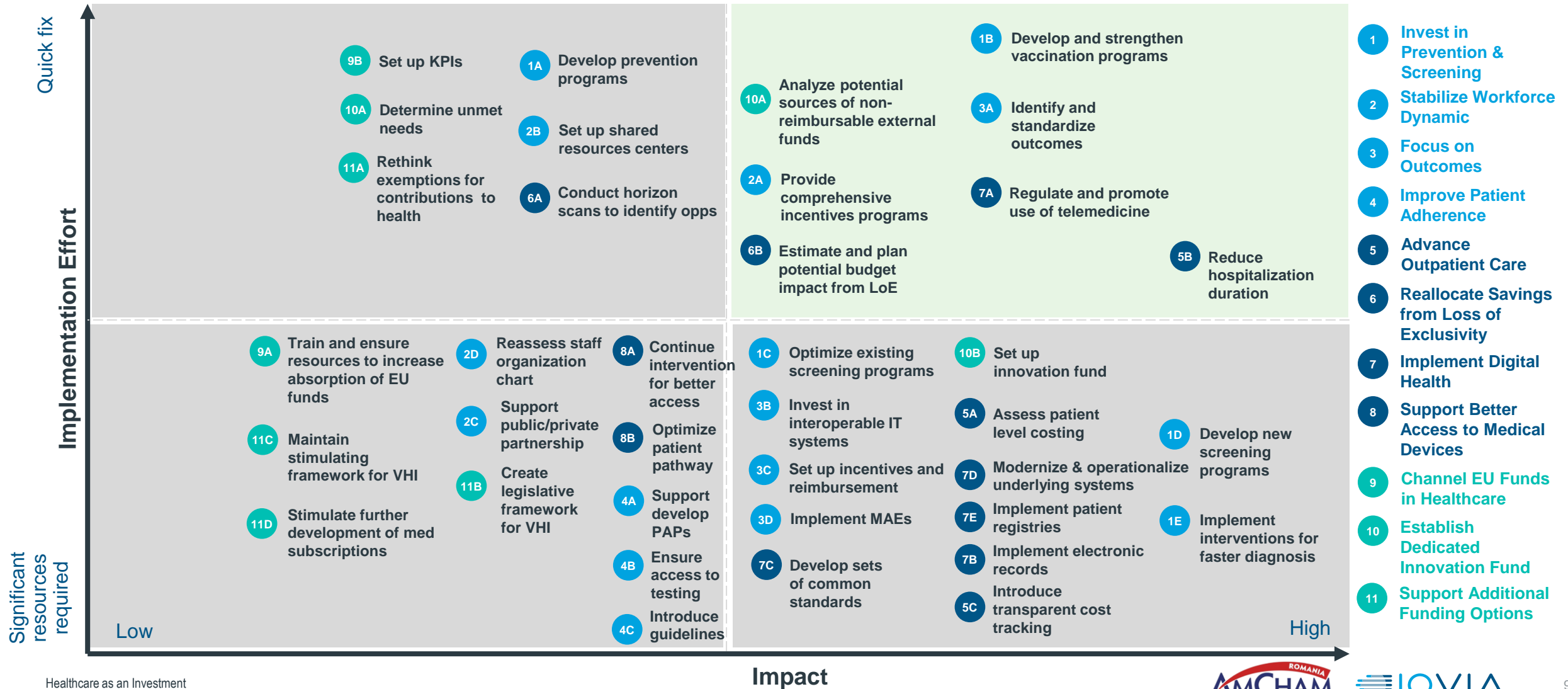
Call to action (4/4)

Strategies for practical implementation of call to action

Call to action	Strategies	Implementation Effort	Impact
 <p>9. Channel EU funds in Healthcare</p>	<ul style="list-style-type: none"> A Train and ensure resources to increase the absorption of EU funds, e.g. EU experts, financial and technical experts, at both central and local level (MoH, HIH, hospitals) B Set-up key performance indicators (KPI) for the management authority and develop incentives in line with KPIs 	<p>●</p> <p>●</p>	<p>●</p> <p>●</p>
 <p>10. Establish Dedicated Innovation Fund</p>	<ul style="list-style-type: none"> A Analyze potential sources of non-reimbursable external funds, especially from the EU, which can be directed to establishing an innovation fund B Determine the unmet needs and prioritize the initiatives regarding the access to innovative treatment and technologies, e.g. identify selected therapies, patient groups, innovative technologies C Set up an innovation fund to finance prioritized initiatives for faster access of patients to innovative treatment 	<p>●</p> <p>●</p> <p>●</p>	<p>●</p> <p>●</p> <p>●</p>
 <p>11. Support Additional Funding Options</p>	<ul style="list-style-type: none"> A Rethink the exemptions for the individual contributions to health and ensuring a more equitable sharing of the burden of taxes collected B Create a legislative framework to expand the use of voluntary health insurance (VHI) also in state hospitals C Maintain a stimulating framework for people who are willing to pay extra insurance for medical services that are not reimbursed from public funds, by increasing tax deductibility for voluntary health insurance D Stimulate the further development of medical subscriptions by ensuring a clear, unambiguous, flexible and stimulating legislative framework 	<p>●</p> <p>●</p> <p>●</p> <p>●</p>	<p>●</p> <p>●</p> <p>●</p> <p>●</p>

The implementation of recommended strategies can be prioritized based on effort and generated impact

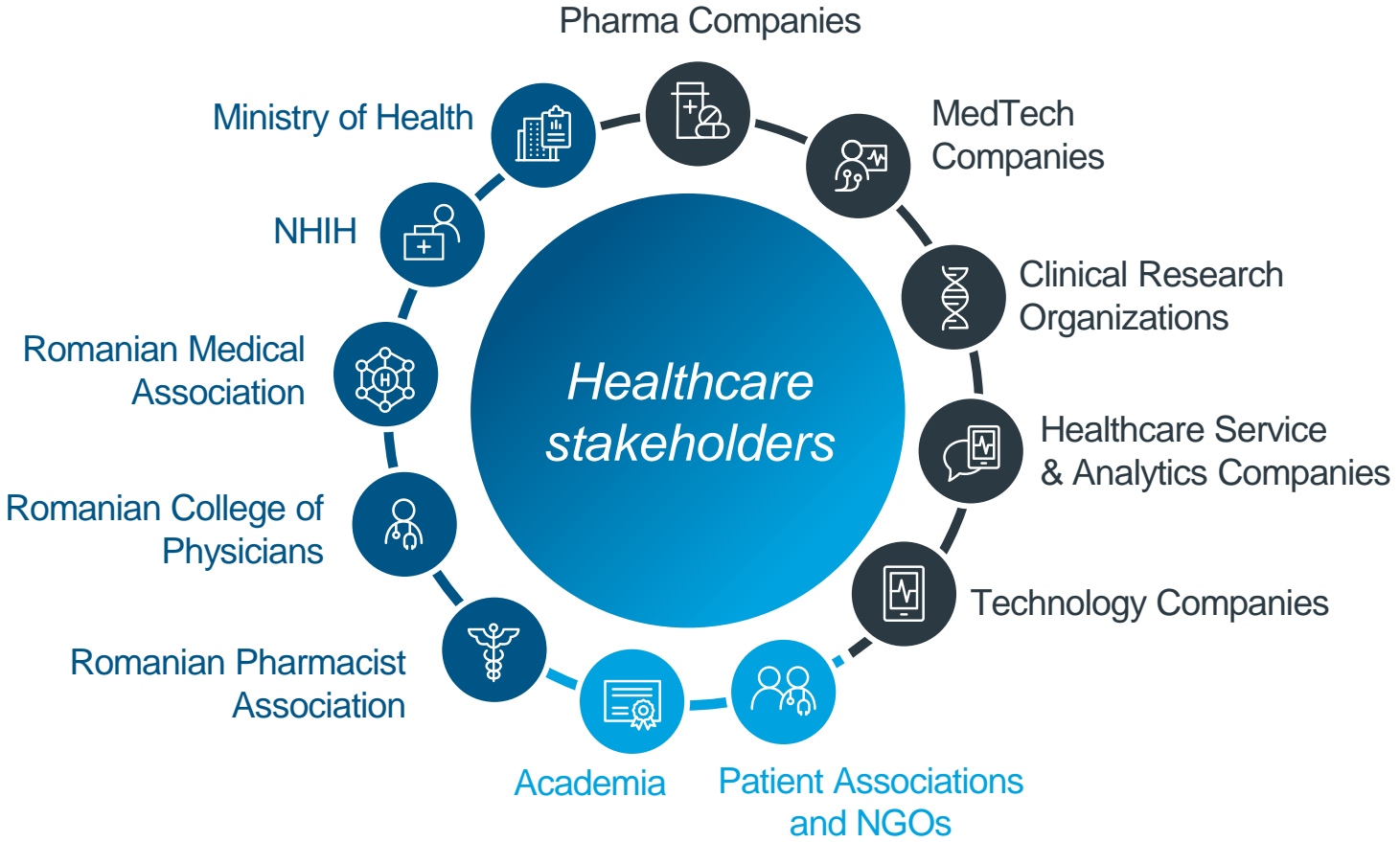
Strategies prioritization



- 1 Invest in Prevention & Screening
- 2 Stabilize Workforce Dynamic
- 3 Focus on Outcomes
- 4 Improve Patient Adherence
- 5 Advance Outpatient Care
- 6 Reallocate Savings from Loss of Exclusivity
- 7 Implement Digital Health
- 8 Support Better Access to Medical Devices
- 9 Channel EU Funds in Healthcare
- 10 Establish Dedicated Innovation Fund
- 11 Support Additional Funding Options

These strategic initiatives can be successfully implemented by combined efforts of all key actors in Healthcare

Public-Private partnership to drive Healthcare forward



Healthcare is a complex topic that requires a holistic approach and various capabilities
By combining efforts of different experts – innovative projects and strategic initiatives can be successfully implemented



This report has been commissioned by the American Chamber of Commerce in Romania, funded by AstraZeneca, Bristol Myers Squibb, CEBIS, Janssen Pharmaceutical Companies of Johnson & Johnson, MSD, Medtronic, Pfizer and Sofmedica and represents an independent research work carried out by IQVIA.





Thank you!

