



PORTUGAL

# Country Cancer Profile

2023



European  
Commission



## The Country Cancer Profile Series

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable inputs received from national experts and comments provided by the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

### Data and information sources

The data and information in the Country Cancer Profiles are based mainly on national official statistics provided to Eurostat and the OECD, which were validated to ensure the highest standards of data comparability. The sources and methods underlying these data are available in the Eurostat Database and the OECD Health Database.

Additional data also come from the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the International Atomic Energy Agency (IAEA), the Institute for Health Metrics and Evaluation (IHME) and other national sources (independent of private or commercial interests). The calculated EU averages are weighted averages of the 27 Member States unless otherwise noted. These EU averages do not include Iceland and Norway. Purchasing Power Parity (PPP) is defined as the rate of currency conversion that equalises the purchasing power of different currencies by eliminating the differences in price levels between countries.

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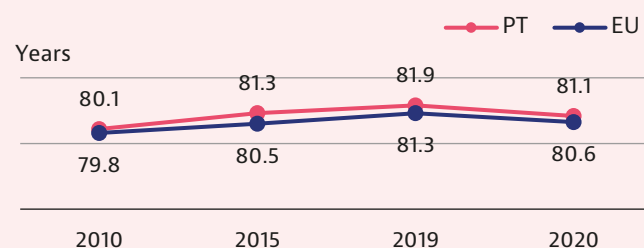
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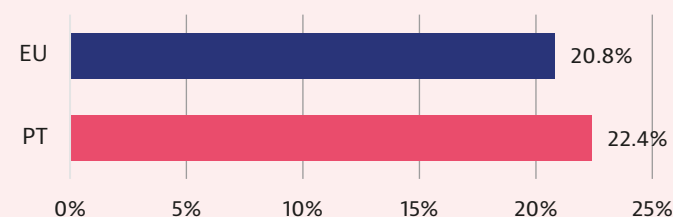
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## Summary of the main characteristics of the health system

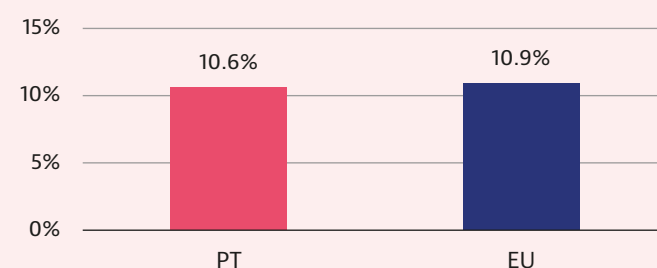
### LIFE EXPECTANCY AT BIRTH (YEARS)



### SHARE OF POPULATION AGED 65 AND OVER (2021)

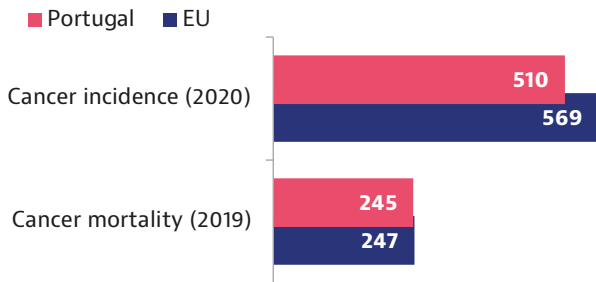


### HEALTH EXPENDITURE AS A % OF GDP (2020)

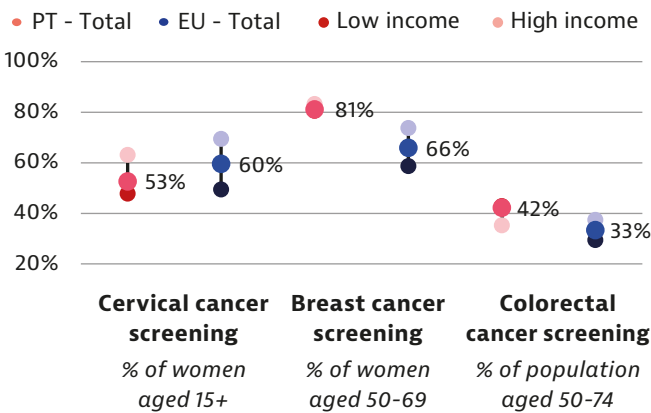
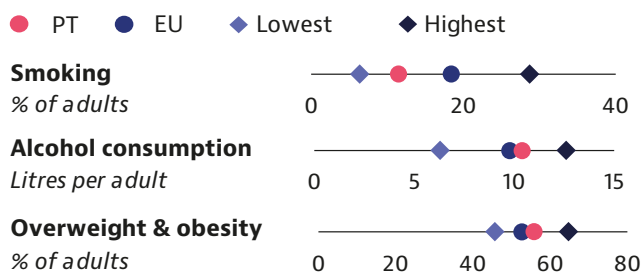


Source: Eurostat Database.

# 1. Highlights



Age-standardised rate per 100 000 population



## Cancer in Portugal

Cancer is the second leading cause of death in Portugal, and improvements to cancer mortality in the past decade were little. Estimated cancer incidence is among the lowest in the EU, but there remains room for improvement. An ambitious cancer control programme will align national policies with Europe's Beating Cancer Plan.

## Risk factors and prevention policies

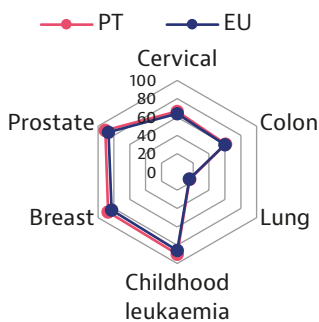
Alcohol drinking, overweight and obesity are major public health concerns in Portugal. Smoking prevalence has been reduced considerably during 2015-2019, and is now below the EU average. National programmes have been outlined to address these issues, and all are aligned with the National Health Plan.

## Early detection

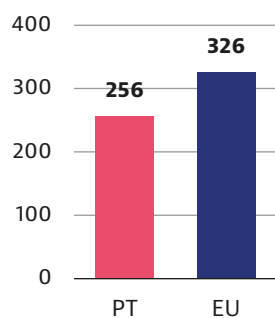
Publicly funded population-based screening programmes are well established for breast, cervical and colorectal cancers. Uptake of breast and colorectal screening is above the EU average, while cervical cancer screening rates are lower than in the EU. Colorectal cancer screening needs the greatest investment to increase geographical coverage and improve adherence.

## Cancer care performance

Portugal has one of the lowest per capita costs for cancer care among EU countries. In 2018, the total cost of cancer was EUR 256 per capita, which is 20% lower than the EU average. Nevertheless, survival rates for most common cancers are higher than the averages across the EU. Contributing factors are a consolidated network of reference centres and availability of medicines and treatment free of charge. However, disparities in availability of radiation therapy and staffing distribution across the country may lead to inequalities.



Five-year net survival rate by cancer site, 2010-14



Total cost of cancer (EUR per capita PPP), 2018

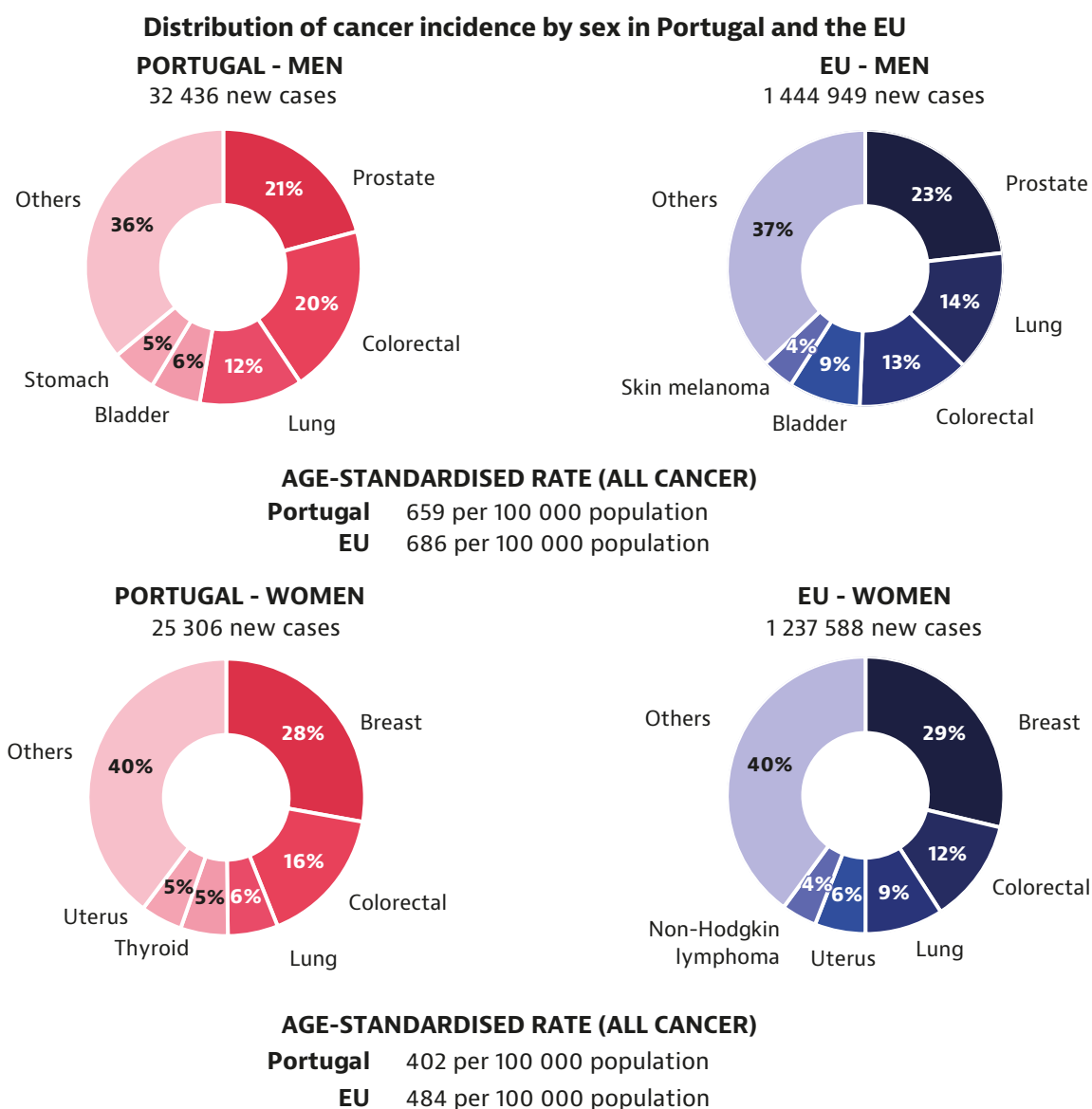
# 2. Cancer in Portugal

## Cancer incidence in Portugal is among the lowest in the EU, but there is room for improvement

According to European Cancer Information System (ECIS) of the Joint Research Centre based on incidence trends from pre-pandemic years, overall cancer incidence in Portugal in 2020 (510 new cases per 100 000 population) was expected to be below the EU average (569 per 100 000). Age-standardised

incidence was expected to be much higher among men (659 new cases per 100 000 population) than women (402 per 100 000) (Figure 1). Nonetheless, the incidence rate for men in Portugal was expected to be 4 % lower than the EU average (685 per 100 000); and for women in Portugal, it was expected to be 17 % lower than the EU average (484 per 100 000).

**Figure 1. Cancers with the highest incidence rates in Portugal are also leading cancers in the EU in 2020**



Note: Corpus uteri does not include cancer of the cervix. These estimates were created before the COVID-19 pandemic, based on incidence trends from previous years, and may differ from observed rates in more recent years.  
Source: European Cancer Information System (ECIS). From <https://ecis.jrc.ec.europa.eu>, accessed on 09/05/2022. © European Union, 2022.

In 2020, 16 new cancers were expected per 100 000 children aged 0-14 years in Portugal – slightly above the EU average of 15 per 100 000. In other age groups, Portugal performs well compared to other EU countries: the age-standardised rate among people aged 15-64 years was expected to be 314 new cases per 100 000 population (about 7 % lower than the EU average), and among people aged 65 years and over it was expected to be 1 565 per 100 000 population (almost 13 % lower than the EU average). In 2013, the estimated number of rare new cancer cases in Portugal was 13 604.

Cancers with the highest incidence among Portuguese men follow the pattern across the EU, with prostate (137 new cases per 100 000 population), colorectal (131 per 100 000) and lung (80 per 100 000) cancers the most common (Figure 1). However, the share of colorectal cancer among men is seven percentage points higher than the EU average. Cancers with the highest incidence among Portuguese women are breast (117 new cases per 100 000 population), colorectal (62 per 100 000) and lung (23 per 100 000) cancers. Colorectal cancer incidence among Portuguese women is four percentage points higher and lung cancer incidence three percentage points lower than the EU averages. Gastric (stomach) cancer was expected to constitute 5 % of new cancer cases in Portugal and to account for an age-standardised rate of 26 new cases per 100 000 population – which is 10 percentage points higher than the EU average. Gastric (stomach) cancer was expected to affect Portuguese men (36 new cases per 100 000) more than women (18 per 100 000). Skin melanoma was

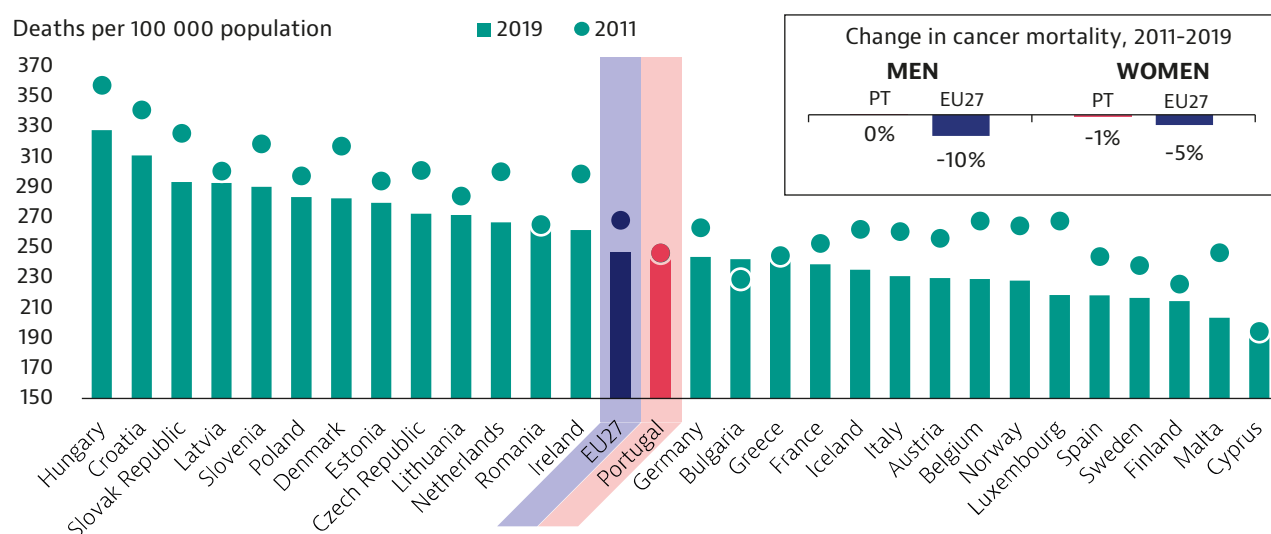
expected to account for 2 % of new cancer cases with an age-standardised rate of 10 new cases per 100 000 population, which is below the EU average (23 per 100 000).

### Improvements to cancer mortality in the past decade are small

Cancer is the second leading cause of death in Portugal, following stroke and ischaemic heart disease. During 2000 and 2018, potential years of life lost due to malignant neoplasms in Portugal saw the second lowest relative decrease among EU countries of 12 %, and it accounted for 1 440 years of life lost among 100 000 people aged up to 75 years in 2018. Contrary to other EU countries, the relative decrease was larger among women (18 %) than men (8 %), and accounted for 1 068 and 1 865 years of life lost in 2018, respectively.

According to the Institute for Health Metrics and Evaluation (2022), in 2019, cancer accounted for 5 837 disability-adjusted life years, which is close to the EU average (5 757). The burden of cancer measured as disability-adjusted life years has slightly increased during 2000-2019 by almost 7 %. The cancer mortality rate was 245 per 100 000 population, which is similar to the EU average (247 per 100 000) (Figure 2). Cancer mortality rates have remained stable in Portugal. During 2011-2019, cancer mortality rates decreased by just 1 % compared to an average 8 % reduction across the EU. Among people aged 64 years and under, the cancer mortality rate decreased by 6 %, and it increased by 1 % for people aged 65 years and over.

**Figure 2. Cancer mortality is close to the EU average, but has improved little since 2011**



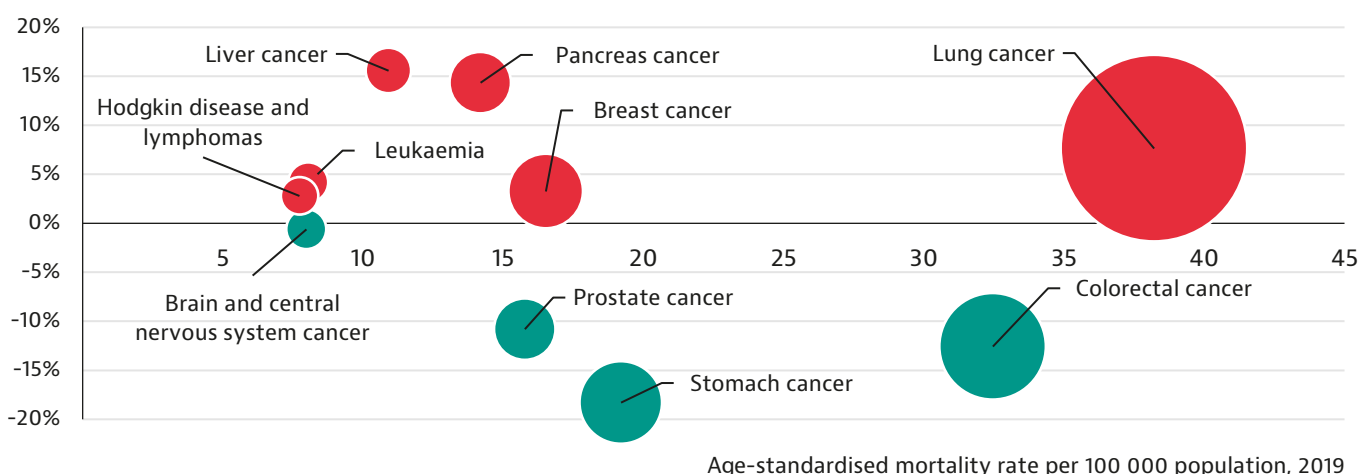
Note: The EU average is weighted (calculated by Eurostat for 2011-2017 and by the OECD for 2018-2019). Source: Eurostat Database.

Cancer mortality in Portugal is substantially attributed to lung and colorectal cancers (Figure 3). In 2019, the mortality rate for lung cancer was 38 deaths per 100 000 population, which is lower than the EU average (50 deaths per 100 000). Lung cancer deaths were higher among men (66 deaths per 100 000 population) than women (17 deaths per 100 000). Among people aged less than 65 years, lung cancer accounted for 15 deaths per 100 000, which is much lower than among people aged 65 years and over (133 deaths per 100 000). Lung cancer deaths among men aged 65 years and over

(238 deaths per 100 000) was much higher than among women aged 65 years and over (58 deaths per 100 000). The mortality rate for colorectal cancer was 32 deaths per 100 000 population, which is higher than the EU average (29 deaths per 100 000). Colorectal cancer deaths were higher among men (47 deaths per 100 000) than women (23 deaths per 100 000). Smoking is a leading risk factor for lung and colorectal cancers. Although progress has been made in reducing smoking habits in Portugal, this is still one of the most important public health issues (see Section 3).

**Figure 3. Lung and colorectal cancers are the leading causes of cancer mortality**

Change in cancer mortality, 2011-2019 (or nearest year)



Note: Red bubbles signal an increase in the percentage change in cancer mortality during 2011-2019; green bubbles signal a decrease. The size of the bubbles is proportional to the mortality rates in 2019. The mortality of some of these cancer types is low; hence, the percentage change should be interpreted with caution. Bubble sizes for mortality rates are not comparable between countries. Source: Eurostat Database.

During 2011-2019, substantial reductions were achieved in mortality rates for gastric (stomach) (-18 %), colorectal (-13 %) and prostate (-11 %) cancers. In 2019, gastric (stomach) cancer accounted for an overall mortality rate of 19 deaths per 100 000 population, which is almost twice the EU average (10 per 100 000 population). Skin melanoma age-standardised mortality rate was 2 deaths per 100 000 population, lower than the EU average of 3 per 100 000 population.

**The new National Cancer Control Programme aligns with the Europe’s Beating Cancer Plan**

The COVID-19 pandemic delayed the launch of the new National Strategy for Cancer Control (NSCC) for the decade 2021-2030. It will become publicly available in the last quarter of 2022 after public consultation, during which key stakeholders (including patient associations) can provide feedback. The NSCC aligns with other strategic plans, such as the National Health Plan and the Europe’s Beating Cancer Plan (European

Commission, 2021), with mid- and long-term objectives assessed in 2025 and 2030.

The NSCC is anchored in four pillars – prevention, early detection, diagnosis and treatment, and survivors and survivorship. Its two overall aims are a) to promote healthier lifestyles via robust multisectoral interventions and strengthen early detection strategies to reduce the incidence of preventable cancers; and b) to improve survivorship and quality of life for people with cancer, underpinned by an equity perspective – notably by promoting the right to return to society and work for people with a history of cancer and by supporting carers. The NSCC also plans to launch a reference network for oncology to support care provision in a coordinated and integrated manner. The network is expected to broaden the list of reference centres across the cancer care pathway by expanding those already in place for rectum, oesophagus, hepato-bilio-pancreatic, testicular, sarcoma, ophthalmic and paediatric cancers (see Section 5.2).

In 2021, legislation was instituted regarding the right to be forgotten (a right that gives individuals the ability to exercise control over their personal data, including health information, by deciding what should be accessible to the public). The National Health Service (NHS) also supports medically assisted procreation for people with cancer. Inter-sectoral policies involving Social Security ensure sickness protection and special

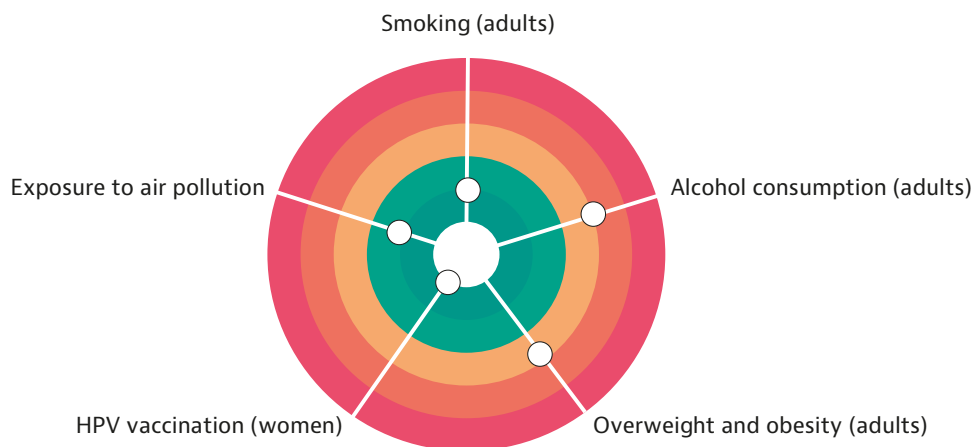
disability protection for eligible people. Portugal is also committed to transposing into national laws the decisions of the EU regarding new population-based screening programmes (screening offered to a specific at-risk target population), such as those for prostate, gastric (stomach) and lung cancers, expanding the list of existing screening programmes (see Section 4).

### 3. Risk factors and prevention policies

In 2019, a third of all deaths in Portugal were attributed to behavioural risk factors (such as smoking, dietary habits, alcohol consumption and low physical activity) and environmental factors. Yet, expenditure on prevention as a share of current health spending in Portugal (1.9 %) was among the lowest in the EU in 2020, and

well below the EU average (3.4 %). Nevertheless, Portugal compares well with other EU countries in terms of human papillomavirus (HPV) vaccination rates among women, smoking and exposure to air pollution (Figure 4). Alcohol consumption, overweight and obesity remain key risk factors for cancer, where improvements are needed the most.

**Figure 4. Alcohol consumption, overweight and obesity are key risk factors for cancer in Portugal**



Note: The closer the dot is to the centre, the better the country performs compared to other EU countries. No country is in the white “target area” as there is room for progress in all countries in all areas.

Sources: OECD calculations based on the European Health Interview Survey (EHIS) 2019 for smoking and overweight/obesity rates, OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health (GISAH) for alcohol consumption (2020), WHO for HPV vaccination (through the WHO/UNICEF Joint Reporting Form on Immunization) (2020) and Eurostat for air pollution (2019).

#### Overall alcohol consumption is slightly higher than the EU average

In 2020, 16 new cancers per 100 000 population were expected to be attributable to alcohol drinking in Portugal (Rumgay et al., 2021). Between 2010 and 2020, alcohol consumption among the population aged 15 years and over decreased by 9 % to slightly above 10 litres per capita, which is above

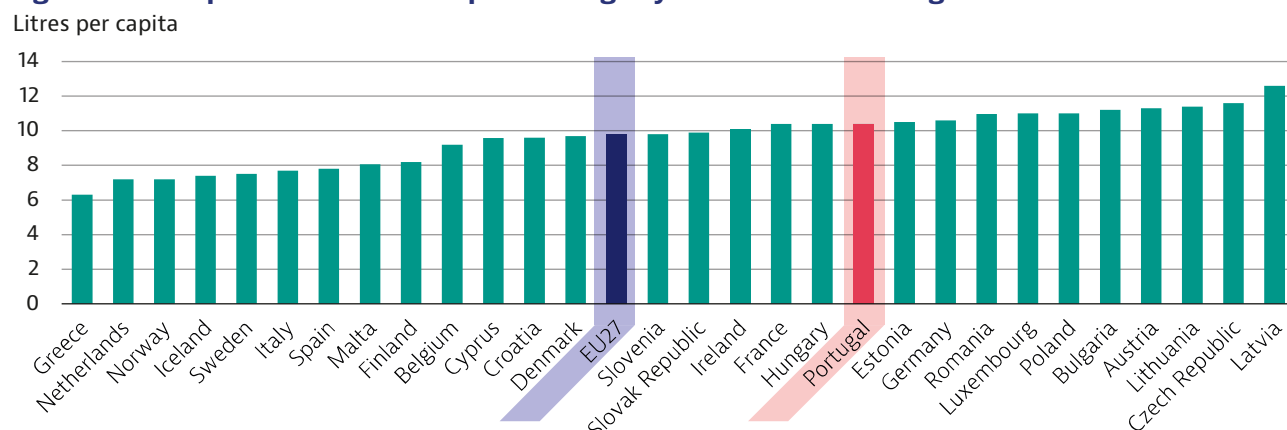
the EU average of 9.8 litres of pure alcohol per person per year (Figure 5).

In 2014, hazardous alcohol consumption was reported by 5 % of the population, in a clear contrast with the EU average (3 %). The rates also show inequalities related to sex, education, geography and income. Hazardous alcohol consumption rates among men (8 %) were seven times higher than among women (1 %); they

were also three times higher among people with lower (6 %) than higher (2 %) education levels. Among people living in rural areas, 7.1 % reported hazardous alcohol consumption – which is more

than double the share among people living in cities (3.4 %). Similarly, hazardous alcohol consumption was nearly double the rate among people on lower (5 %) than higher (3 %) incomes.

**Figure 5. Per capita alcohol consumption is slightly above the EU average**



Note: The EU27 average is unweighted (calculated by the OECD).  
Sources: OECD Health Statistics 2022; WHO GISAH.

The National Plan for the Reduction of Addictive Behaviours and Dependencies 2013-2020 aimed to reduce the impact of risks from exposure to alcohol among young people and to delay hazardous behaviours. It aimed to strengthen health literacy among the population, to support people to become proactive agents in better managing their health, and to promote healthier choices and behaviours (SICAD, 2013).

**Despite progress, smoking remains one of Portugal's most important public health problems**

According to findings from the European Health Interview Survey (EHIS), the proportion of daily smokers of cigarettes in Portugal saw a 30 % reduction from 16 % in 2014 to 12 % in 2019 (below the EU average of 18 %)<sup>1</sup>. In 2019, smoking prevalence among men (16 %) was over twice as high as that among women (7 %), and five times higher among people aged 15-64 years (14.5 %) than people aged 65 years and over (2.9 %) (Figure 6). It was also higher among people with lower (12 %) than higher (8 %) education levels, although these rates were lower than the EU averages among people with lower (19 %) and higher (13 %) education levels. The same situation holds when grouping by income: smoking prevalence was more common among people on lower (11 %) than higher (10 %) incomes, and both rates were below the EU averages among people on lower (22 %) and higher (15 %) incomes. Daily use of vaping products is increasing among people aged 15 years and over.

Although vaping products are prohibited in the same places as tobacco, policies to limit selling and marketing of vaping products are not yet implemented.

Smoking was considered a priority health problem under the National Health Plan 2012-2016, which led to the creation of the National Programme for Tobacco Prevention and Control. Its aims were to reduce prevalence of smoking in the population aged 15 years and over to less than 15 %, to reduce tobacco and e-cigarette smoking initiation among people aged 13-18 years, and to provide smoking cessation counselling in primary health care to half the smokers in the country (DGS, 2020a). Additionally, the National Programme for Tobacco Prevention and Control aimed to include pay-for-performance indicators in primary health care related to activities supporting smoking cessation, to launch a media campaign on smoking prevention and to increase taxes on tobacco products as part of a comprehensive approach to tobacco prevention and control.

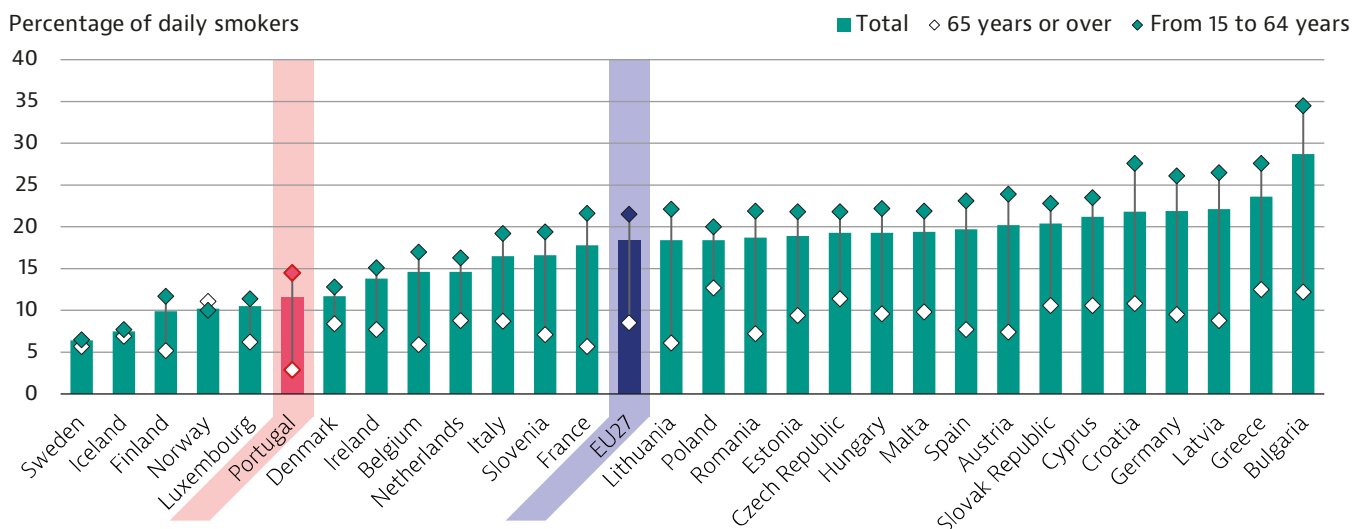
**Overweight and obesity are public health concerns**

From 2014 to 2019, the proportion of overweight and obesity among the population aged 15 years and over increased slightly to 56 %, which is higher than the EU average (53 %). Some 61 % of men were overweight or obese (on a par with the EU average of 60 %), while among women the prevalence was 52 % (above the EU average of 46 %).

<sup>1</sup> These estimates differ from National estimates. In 2019, national estimates for daily smokers aged 15 years and over was 14.2 %, with a smoking prevalence higher among men (20.2 %) than women (9 %) (DGS, 2020a).



**Figure 6. Smoking rates are five times higher among people aged 15-64 years than people aged 65 years and over**



Note: The EU average is weighted (calculated by the OECD). Sources: Eurostat Database (EHIS). Data refer to 2019.

Overweight and obesity rates were exceptionally high among men aged 65 years and over (71 %) and with lower education levels (73 %) – rates that increased almost by 10 % between 2014 and 2019. Prevalence of overweight and obesity was significantly higher among the population with lower (66 %) than higher (38 %) education levels.

These rates are linked to unhealthy diets and physical inactivity. For example, daily vegetable consumption decreased by 24 % in 2014-2019, and people with lower education levels consumed 28 % fewer vegetables than those with higher education levels. In recent years, the share of people performing health-enhancing physical activity for at least 150 minutes a week decreased from 18 % in 2014 to 17 % in 2019, which is well below the EU average (33 %). Prevalence of physical activity was lower among women (13 % vs. 21 % among men), people aged 65 years and over (8 % vs. 20 % among those aged 15-64 years) and people with lower education levels (12 % vs. 26 % among those with higher education levels). In all these groups, prevalence of physical activity was markedly lower than the equivalent EU averages.

To address these issues, priority programmes were outlined. The National Programme for the Promotion of Healthy Eating aims to broaden the number of food categories with a reformulation of the levels of salt, sugar and trans fatty acids by 2025 (DGS, 2022). It also seeks to support legislation introducing restrictions on food advertising to children aged under 16 years and to promote adequate nutrition for the first 1 000 days of life.

In 2017, Portugal instituted a special consumption tax on highly calorific food and sugar-sweetened beverages; all revenues from this tax support health promotion policies and interventions. The National Programme for the Promotion of Physical Activity instituted counselling in primary health care to promote physical activity, in tandem with providing training to health professionals on the topic (DGS, 2021a). All these programmes follow a health-in-all-policies approach and are aligned with the National Health Plan 2012-2016 (Extension to 2020) and other priority programmes such as the NSCC 2021-2030.

### Exposure to air pollution is lower in Portugal than in the EU

Exposure to air pollution in the form of PM<sub>10</sub><sup>2</sup> decreased by 26 % during 2010-2019 to 18.6 µg/m<sup>3</sup>, which is lower than the EU average (20.5 µg/m<sup>3</sup>). Portugal also had a lower concentration of PM<sub>2.5</sub> than in the EU (9.1 µg/m<sup>3</sup> vs. 12.6 µg/m<sup>3</sup>). These results link to the first National Air Strategy, approved in 2016. Further improvements are expected in the coming years with the implementation of the National Air Pollution Control Programme 2030. According to the Institute for Health Metrics and Evaluation, ozone and PM<sub>2.5</sub> exposure accounted for an estimated 2 % of all deaths in Portugal in 2019, a rate lower than the average across the EU (4 %).

<sup>2</sup> Particulate matter (PM) is classified according to size: PM<sub>10</sub> refers to particles less than 10 micrometres in diameter; PM<sub>2.5</sub> to particles less than 2.5 micrometres in diameter.

### Human papillomavirus vaccination coverage and uptake are historically high in Portugal

HPV infection is a well-established cause of cervical cancer. In Portugal, current estimates suggest an age-standardised incidence of 15 new cases of cervical cancer per 100 000 women, which is higher than the EU average (13 per 100 000). Cervical cancer mortality accounts for 3 deaths per 100 000 women, which is slightly lower than the EU average (4 deaths per 100 000).

HPV vaccination is included in the National Vaccination Programme, which is universal and free of charge to all citizens. Among girls aged up to 15 years, HPV vaccination coverage was 95 % in 2020. From 2021, boys are also eligible to receive the HPV vaccine. Furthermore, the National Programme for Viral Hepatitis aims to eliminate hepatitis B and C by 2030. The hepatitis B vaccine has been administered free of charge to children since 1995, with 98 % coverage. For hepatitis C, access to treatment is available free of charge, and cure rates are over 96 %.

## 4. Early detection

### Three population-based cancer screening programmes are well established

The NHS publicly funds population-based cancer screening programmes for breast, cervical and colorectal cancers. The programmes evolved substantially in 2018, within the terms of the National Programme for Oncological Diseases 2016-2020, expanding geographical coverage and increasing population coverage rates. Colorectal cancer screening needs the most investment to increase geographical coverage and adherence rates. The COVID-19 pandemic reduced the operational capacity of all screening programmes, but activities were resumed promptly (see Section 5.4).

Plans are in place to develop an electronic tool for centralised, real-time monitoring of the cancer screening programmes. Attempts have been made to link screening data with data stored at the National Cancer Registry (see Section 5.2). Thus far, interoperability is hampered by data being stored in different health regions. Improvements to harness performance intelligence could lead to better monitoring of the effectiveness of screening, and inform decision making.

### Uptake of breast cancer screening in Portugal is among the highest in the EU

Breast cancer screening started in 1986, targeting women aged 50-69 years. In mainland Portugal, geographical coverage was 78 % in 2019. On average, 715 000 women are eligible for breast cancer screening every year. In 2020, population coverage was 41 %, and the adherence rate was

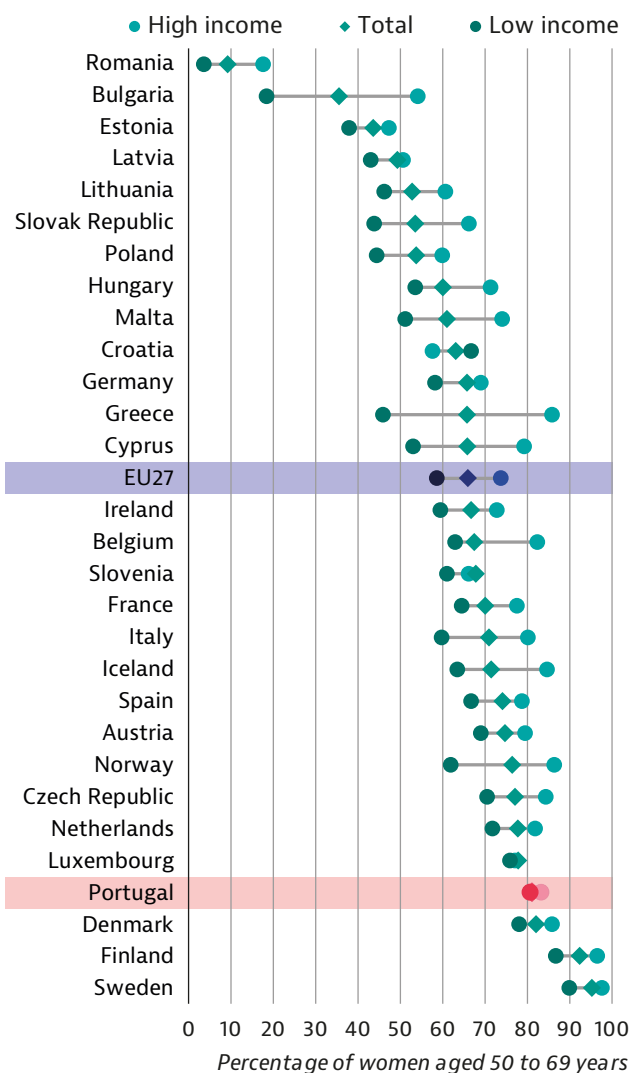
62 % (around 192 000 women screened) (DGS, 2021b).

According to EHIS data, the share of Portuguese women aged 50-69 years who reported being screened for breast cancer in the past two years was 81 %, which is 23 % higher than the EU average (66 %) (Figure 7). Data suggest minimal differences in self-reported use of breast cancer screening services by education, income and geography. Slightly more women on higher incomes (83.2 %) reported having breast cancer screening than those on lower incomes (80.6 %). Screening services are provided free of charge, meaning that there are no financial barriers to uptake.

### Cervical cancer screening is more common among women with higher education levels

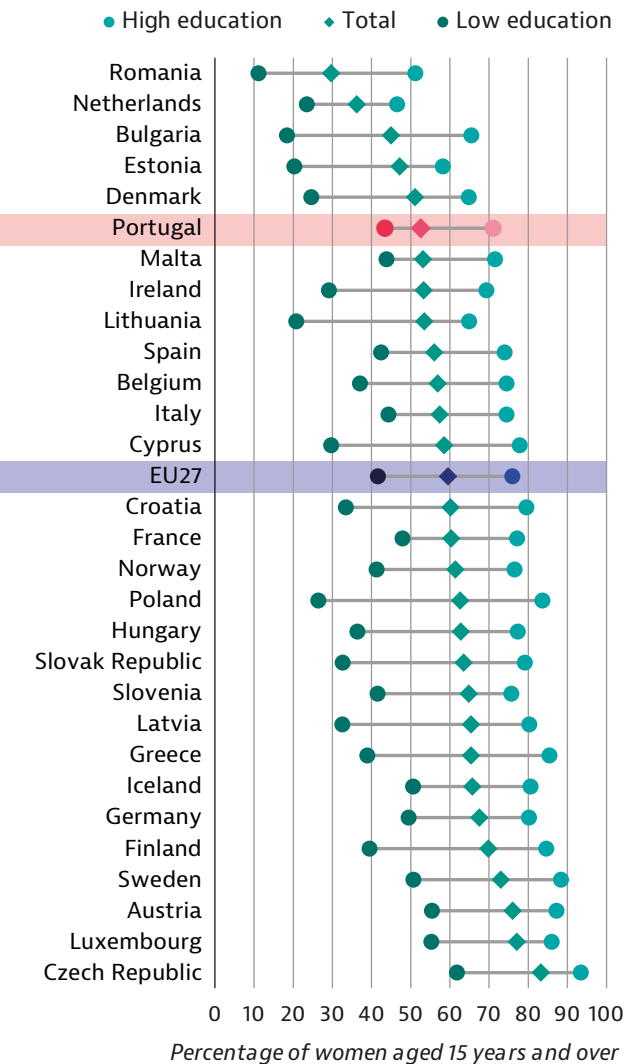
Cervical cancer screening started in 1990 in Portugal. The programme targets women aged 25-60 years and covers all of Portugal's territory. On average, 615 000 women per year are eligible for screening. According to EHIS data, in 2019, uptake of cervical screening in the past three years was 53 %, which is below the EU average (60 %) (Figure 8). The difference in screening uptake between women with higher (71 %) and lower (43 %) education levels was substantial. Fewer women living in rural (48 %) than urban (60 %) areas, and fewer women on lower (48 %) than higher (63 %) incomes reported having a smear test in the past three years. Because of the COVID-19 pandemic, in 2020, population coverage decreased almost by half to 22 %, with an adherence rate of 88 % (nearly 115 000 women screened) (DGS, 2021b).

**Figure 7. Breast cancer screening uptake is the fourth highest in the EU, with a small income gap**



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 50 to 69 years who reported receiving a mammogram in the past two years. Source: Eurostat Database (EHIS). Data refer to 2019.

**Figure 8. Cervical cancer screening rates in Portugal are below the EU average**



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 15 years and over who reported having a cervical smear test in the past three years. Source: Eurostat Database (EHIS). Data refer to 2019.

**Geographical coverage and adherence rates for colorectal cancer screening need improvement**

Colorectal cancer screening was instituted in 2008. The programme targets men and women aged 50-74 years, who are invited for a faecal occult blood test every two years. The programme is implemented in all five health regions in mainland Portugal, with geographical coverage of 76 % across mainland Portugal. On average, about 1.5 million people are eligible for screening annually. In 2020, the coverage rate was 15 %, and the adherence rate was 41 %, representing around 88 000 people screened (DGS, 2021b).

In 2019, according to EHIS data, the share of men aged 50-74 years reporting having had colorectal cancer screening in the past two years was 41 %; for women, the rate was slightly higher (43 %). These proportions are higher than the EU averages (33 % for men and 34 % for women). In 2014, Portuguese people living in urban areas (41 %) reported higher participation in colorectal cancer screening than those living in rural areas (30 %), suggesting some geographical disparities in access.

### Implementation of new population-based cancer screening programmes is under consideration

The Directorate-General for Health (DGS), in the context of the National Programme for Oral Health Promotion, piloted an Oral Cancer Early Intervention Project during 2014-2019. The

results of the pilot are not yet clear, and the extent to which a follow-up programme will be included in the NSCC 2021-2030 is uncertain. The new NSCC will address any new European Council recommendations for cancer screening programmes.

## 5. Cancer care performance

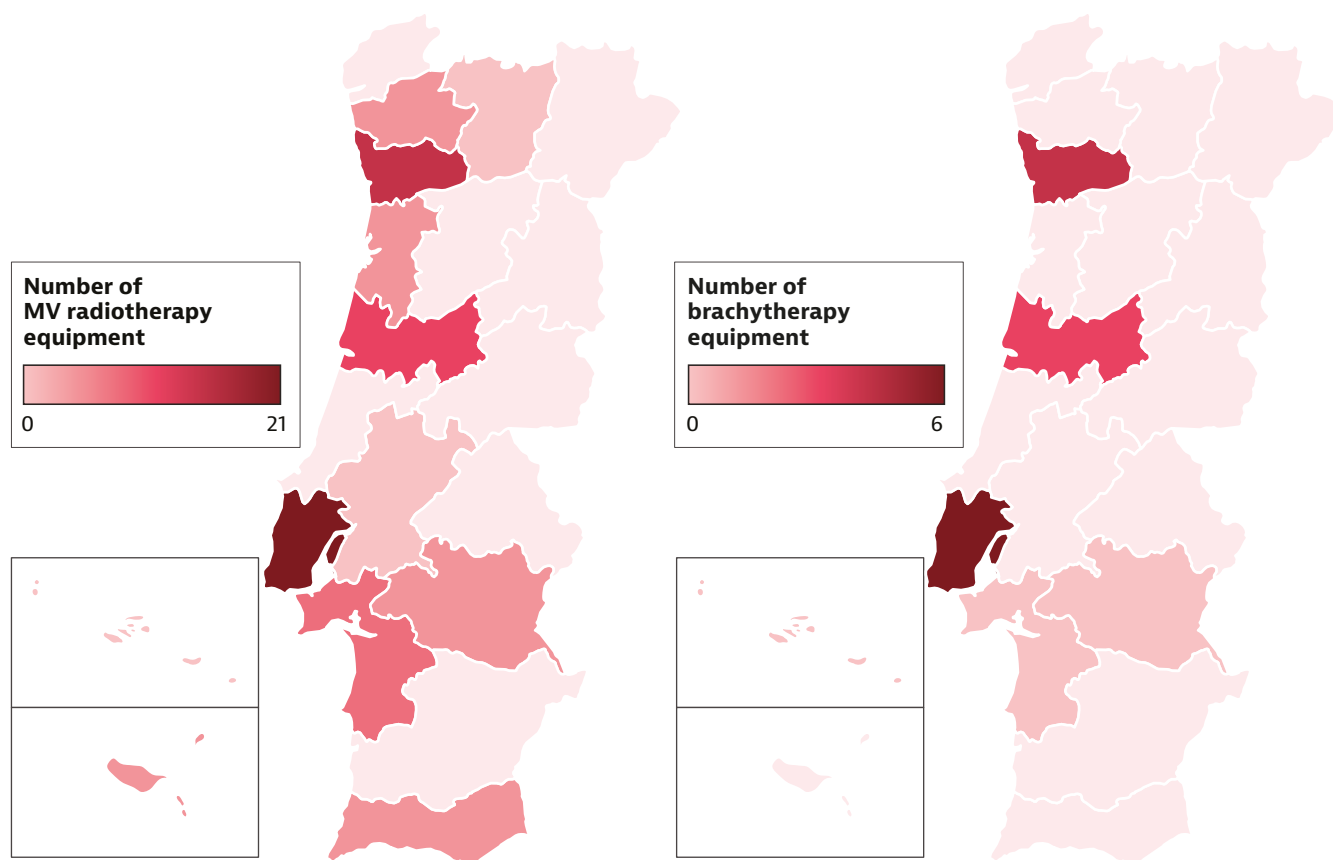
### 5.1 Accessibility

#### Radiation therapy is concentrated in high-volume centres, mainly in coastal areas of Portugal

According to a survey among NHS hospitals, resources for radiation therapy are concentrated in 10 high-volume centres, with equipment that has been technologically updated over the past 15 years, including 31 radiation therapy equipment

units (DGS, 2020b). According to information reported to the International Atomic Energy Agency (2022) by public and private care providers, 56 megavolt (MV) units are distributed mainly in coastal areas of Portugal, where population density is higher (Figure 9). A total of 17 units with capacity for brachytherapy are available in six regions of Portugal distributed among seven centres. More complex stereotactic treatments are concentrated in five centres.

**Figure 9. Distribution of radiotherapy equipment is asymmetrical in Portugal**



Note: Compilation of self-reported data from public and private care providers in 2021 (or nearest year). Source: International Atomic Energy Agency.

## Disproportionate distribution of human resources may affect care experiences and outcomes

According to a survey among NHS hospitals (DGS, 2020b), human resources in medical oncology are estimated at around 268 doctors, of whom a fifth do not work full time. The distribution of medical oncologists suggests inequities related to territorial distribution; this exposes medical oncology departments to variable workload levels, with potential impacts on the care experiences and outcomes of people with cancer.

Among 10 high-volume centres providing radiation therapy, around 200 technicians supporting diagnostics and radiotherapy therapies are available, and their distribution across centres seems proportional to the number of patients treated. An estimated total of 91 radiation oncology specialists are available in these 10 centres, of whom 80 work full time. The number of medical physicists is around 46, of whom only 46 % hold specific training in radiotherapy physics. The number of medical physicists (4.6 per million inhabitants) is below the EU recommendation of 18 per million inhabitants. This situation could be improved with changes to career regulations and certification of these professionals by the Ministry of Health. The NHS human resources allocated to the surgical management of cancer is uncertain.

## Maximum waiting times were instituted in 2008, but monitoring needs improvement

In 2008, legislation instituted maximum guaranteed response times to improve timely access to care. The right for care provision in an acceptable time frame was reinforced with the publication of a charter on the right to access health care in 2014. In cases of suspected or confirmed oncological disease, the maximum time limit for a referral from primary health care to specialist care is 24 hours, unless there is a maximum degree of urgency, in which case the patient should be referred immediately to an emergency service. For other cases, the first specialist consultation must be carried out within 7, 15 or 30 days, based on priority tiers. A similar approach was applied to elective surgery, with maximum response times varying from 72 hours to 60 days. In 2017, maximum waiting times were also defined for radiotherapy treatment and for several complementary diagnostic exams.

According to the Portuguese Court of Auditors (2022), during 2017-2019, waiting times for a first specialist consultation varied greatly among the three major oncology centres in Portugal (IPO Coimbra, IPO Lisboa and IPO Porto). Monitoring of maximum guaranteed response times is possible

with the integrated access management system (SIGA SNS) managed by the Shared Services of the Ministry of Health, but oversight has been limited, hampered by providers' information systems (Portuguese Court of Auditors, 2022). Further investment is planned in the NSCC 2021-2030 to improve timely access to radiotherapy and other non-surgical treatment.

## Access to innovative cancer medicines is ensured by the National Health Service

The National Authority for Medicines and Health Products is responsible for authorisation and marketing of new medicinal products, including health technology assessments. During 2017-2020, 80 antineoplastic and immunomodulatory medicines were approved (Portuguese Court of Auditors, 2022). For these, the average assessment time decreased by 21 % during 2018-2021 to 141 days.

In June 2018, the European Medicines Agency (EMA) recommended the first chimeric antigen receptor T-cell (CAR-T) treatments in Europe for approval. Access to these treatments has improved among EU Member States, but the high costs and logistical complexity of implementing them challenge their rollout. In Portugal, the first treatment with this therapy occurred in 2019, and a total of four centres can now administer CAR-T cell therapies. All centres are contributing to the CAR-T data collection initiative of the European Society for Blood and Marrow Transplantation. Secondary use of the data will support academic research and post-authorisation safety studies instituted by the EMA.

## A new strategic plan for palliative care seeks to enhance coverage

A 2012 law created the National Palliative Care Network, which regulates access to end-of-life care, including for the paediatric population. The Network is based on an integrated and coordinated intervention model, which provides different types of units and teams for the provision of palliative care, cooperating with hospitals and other health structures available in the community. Admission to palliative care is based on referral by a health care professional (such as a family doctor), or at the request of the patient or their representative.

The third strategic Plan for the Development of Palliative Care (2021-2022) is under way. This plan seeks to continue expanding geographical availability of palliative services in mainland Portugal, which still has limited coverage. Over the next decade, a key objective is to embed palliative care fully across all levels of the health care system.

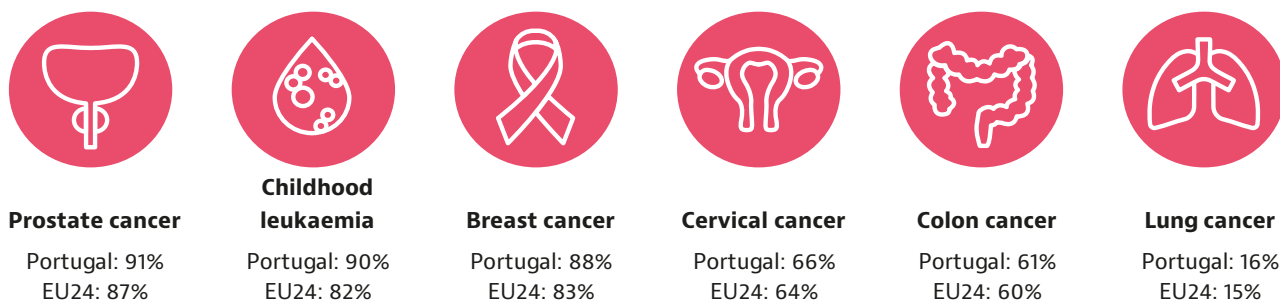
## 5.2 Quality

### Portugal outperforms the EU average in survival rates for most common cancers

Five-year cancer survival rates - a marker of care quality - are high for most cancer types in Portugal. This is linked to improved cancer quality care, notably in terms of early detection and access to innovative treatments. For all the most common cancers (childhood leukaemia, prostate,

breast, cervical, colon and lung cancers), Portugal performs better than the EU average, based on the most recent data available for people diagnosed between 2010 and 2014 (Figure 10). Contributing to these results is the strategy for early detection with high uptake of population-based screening. The survival rate for lung cancer, however, remains disproportionately low relative to other cancers, although it is on a par with the EU average (16 % in Portugal and 15 % across the EU).

**Figure 10. Cancer survival rates in Portugal are all above the EU averages**



*Note: Data refer to people diagnosed between 2010 and 2014. Childhood leukaemia refers to acute lymphoblastic cancer. Data on childhood leukaemia represent less than 100 % of the total population.*

*Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.*

### Multidisciplinary team meetings are compulsory before a therapeutic decision is made

A study found that multidisciplinary team meetings, often organised by type of cancer, occur in most institutions providing care to cancer patients (DGS, 2020b). Only two institutions reported not having multidisciplinary meetings but noted that agreements are in place with other institutions for multidisciplinary discussion of selected cases. Most multidisciplinary meetings are disease-focused and the medical specialties most represented in these meetings are general surgery, medical oncology and radiation oncology, and a broad range of other medical and surgical specialties and sub-specialties also take part (such as urology, plastic surgery, rehabilitation medicine, genetics, internal medicine, palliative medicine and psycho-oncology). Other services may also be called for support therapeutic decision making, such as pharmaceutical and social services.

### In two years, Portugal consolidated a network of reference centres for various types of cancer

Cancer care provision organised around reference centres was instituted in national law in 2014. The first reference centre was recognised in 2015 in oncology–ophthalmology. Others followed in 2016, totalling 47 reference centres in adult

oncology based on volume norms: oesophageal cancer (6), rectal cancer (21), testicular cancer (4), hepato-bilio-pancreatic cancer (10), soft tissue and bone sarcomas (5) and ophthalmic cancer (1). Four reference centres also concentrate provision of cancer care for the paediatric population in Portugal. One of the obligations of reference centres is to act as agents of innovation – notably by conducting impactful scientific research such as clinical trials and transferring learning to the cancer care pathway.

### Clinical trials are concentrated on breast, lung, bladder and prostate cancers

Only about half of the institutions providing cancer care were undertaking clinical trials with an active recruitment status in 2018. The number of clinical trials by institution varied greatly, ranging from 1 to 54. The clinical trial landscape has improved in recent years, but Portugal still underperforms in terms of the number of clinical trials compared to other EU countries of similar geographical size. There is room to strengthen the research culture within the NHS – notably by streamlining regulatory and authorisation processes, addressing the scarcity of human resources dedicated to clinical research and enhancing the information available on cancer clinical research to support people’s decision making. For example, a non-governmental organisation recently started

to list on its webpage all cancer clinical trials that were recruiting participants, with the aim of supporting medical doctors and people with cancer.

### **Key challenges after transitioning to a National Cancer Registry are yet to be resolved**

A 2018 law instituted the National Cancer Registry, which integrates data from regional cancer registries, the Paediatric Cancer Registry and the registries of the two autonomous regions. Management of the Registry is currently under the Board of Directors of the National Oncology Institutes. The National Cancer Registry follows the International Classification of Diseases for Oncology, third edition.

Data flows into the Registry are linked to all public health institutions (primary health care and hospitals) in Portugal, and to some private institutions (hospitals and laboratories) that have signed a sharing agreement with the Registry. Available information includes patient identification, diagnosis, tumour characteristics, treatment and follow-up, including cancer staging, biomarkers, and treatment outcomes. Follow-up data include date and cause of death, which are crucial for measuring survival after diagnosis and/or treatment. Creation of a national cancer dataset is possible with a person identifier; this facilitates inter-operability of the National Cancer Registry with various national or central registries (such as the information system for death certificates) and local information systems (including hospital application for pathological anatomy, chemotherapy and radiotherapy). Full inter-operability has not been achieved, however, making it difficult to create a trustworthy cancer dataset capable of following a patient's care trajectory.

### **Patient-reported data are not yet embedded in information systems**

Patient-reported data on outcomes and experiences of care are not collected routinely. Their use in clinical practice is circumscribed to a few ad hoc projects, mainly in institutions with robust clinical cancer research environments. The NSCC 2021-2030 plans to implement a survey on morbidity and disability among people with a history of cancer in 2026 and a follow-up in 2030. A pilot is expected during 2025, after which collection of patient-reported data will be systematised in the National Cancer Registry.

## **5.3 Costs and value for money**

### **Most cancer care is free of charge, but some copayments may burden patients**

The Portuguese NHS is a universal tax-financed health system. In 2020, health expenditure as a share of GDP was 10.6 %. Provisional data suggest that health expenditure rose to 11.2 % of GDP in 2021, largely driven by responses to the COVID-19 pandemic. Out-of-pocket expenditure accounted for 30.5 % of current health expenditure, which is much higher than the EU average (15.4 %), and has risen by almost six percentage points since 2010 (OECD/European Observatory on Health Systems and Policies, 2021). In recent years, many people have chosen to subscribe to private health insurance, which has essentially a supplementary role to the NHS. Only a few insurance schemes in the market cover cancer care up to a negotiated cap; after the cap is reached, people return to the NHS to continue their care trajectory.

To reduce access inequalities caused by costs, people with cancer are exempt from payment of user fees for consultations and complementary diagnostics prescribed during treatment and follow-up. Medication used in inpatient and outpatient cancer treatment is free of charge to patients in the NHS; for other medicines, a special copayment scheme with four discount tiers – ranging from 15 % to 90 % of the public sale price – applies. The NHS also covers non-urgent transport of patients for consultations and medical treatment for cancer. Prostheses and other technical aids can also be reimbursed if prescribed.

### **Portugal has one of the lowest per capita costs for cancer care among EU countries**

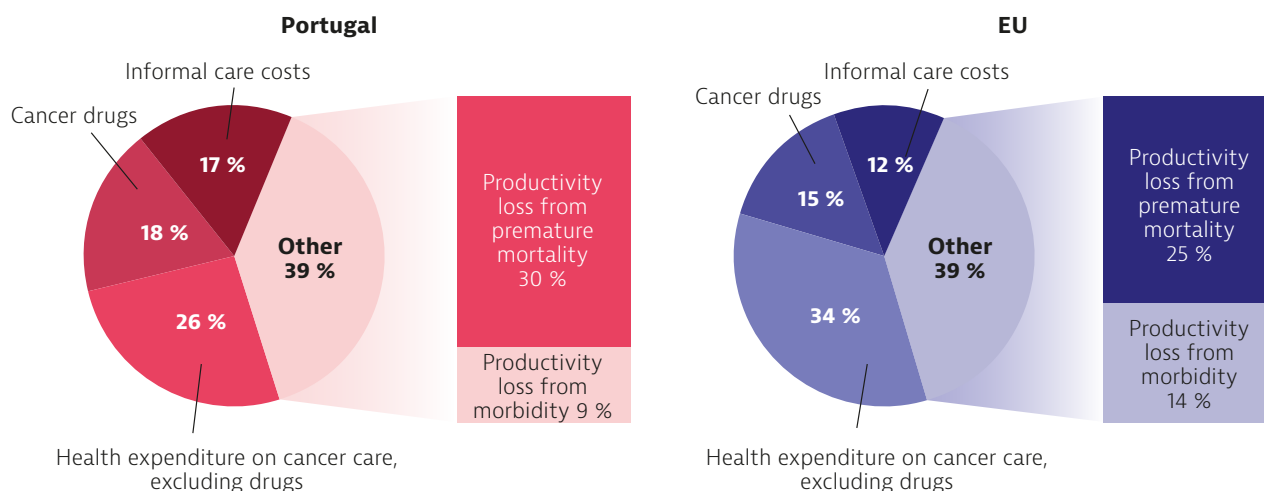
The costs associated with cancer care vary greatly among EU countries. In 2018, among EU Member States, the cost per capita adjusted for purchasing power parity (PPP) varied from EUR 160 in Romania to EUR 524 in the Netherlands (Hofmarcher et al., 2020). In Portugal, the cost per capita was EUR 256, which is 20 % lower than the EU average (EUR 326).

Of a total cost of EUR 2 208 million, direct costs accounted for 44 % of health expenditure on cancer care (of which two fifths related to cancer drug expenditure), representing 5.4 % of national health expenditure (Figure 11). During 2017-2020, expenditure on oncology medicines dispensed in NHS hospitals increased by 55 % to slightly more than EUR 440 million. Productivity losses accounted for 39 % of health expenditure on cancer care, of which premature mortality had the largest impact (30 %), followed by productivity

loss from morbidity (9 %). Informal care, which represents the opportunity cost of time forgone by relatives and friends to provide unpaid

care, accounted for an estimated 17 % of health expenditure on cancer care.

**Figure 11. The distribution of cancer costs by component is similar to the EU average**



Note: Data refer to 2018. Cancer drug expenditure does not include confidential rebates. The EU27 average is unweighted (calculated by the OECD).

Source: Hofmarcher et al. (2020).

## 5.4 COVID-19 and cancer: building resilience

In 2020, a plan was outlined to improve NHS responsiveness amid the COVID-19 pandemic. The health budget was increased by 6 % compared to 2019, providing an additional EUR 800 million. The plan also sought to strengthen NHS management – notably by allocating EUR 100 million to performance incentives and greater accountability of NHS hospital administrations (OECD/European Observatory on Health Systems and Policies, 2021).

### The pandemic disrupted cancer screening activities, but recovery is under way

As in many other health care systems, cancer screening activities were disrupted in Portugal for up to five months from the outset of the COVID-19 pandemic, but resumed quickly thereafter. By June 2022, the screening rate for colorectal cancer had returned to pre-pandemic levels, and recovery of breast cancer services to past performance levels was almost re-established. Hospital activity related to cancer care experienced less disruption in some respects, however – for example, colposcopies saw improvements in waiting lists.

Breast cancer screening invitations decreased by 42 % in 2020 (Figure 12), and the number of women screened fell by 45 % compared to 2019 after activities halted between March and July

2020 (DGS, 2021b). The adherence rate decreased by three percentage points from 65 % in 2019 to 62 % in 2020. The largest disruptions to screening uptake occurred in the Northern and Southern Health Regions. In addition, in the Northern Health Region, screening activities resumed later that year because of contract renegotiation with the partner running screening activities.

Cervical cancer screening activities were most affected by the pandemic. Invitations to screening dropped by 61 %, and the number of women screened fell by more than half. Notwithstanding, the overall adherence rate improved by 12 % in mainland Portugal (from 76 % in 2019 to 88 % in 2020).

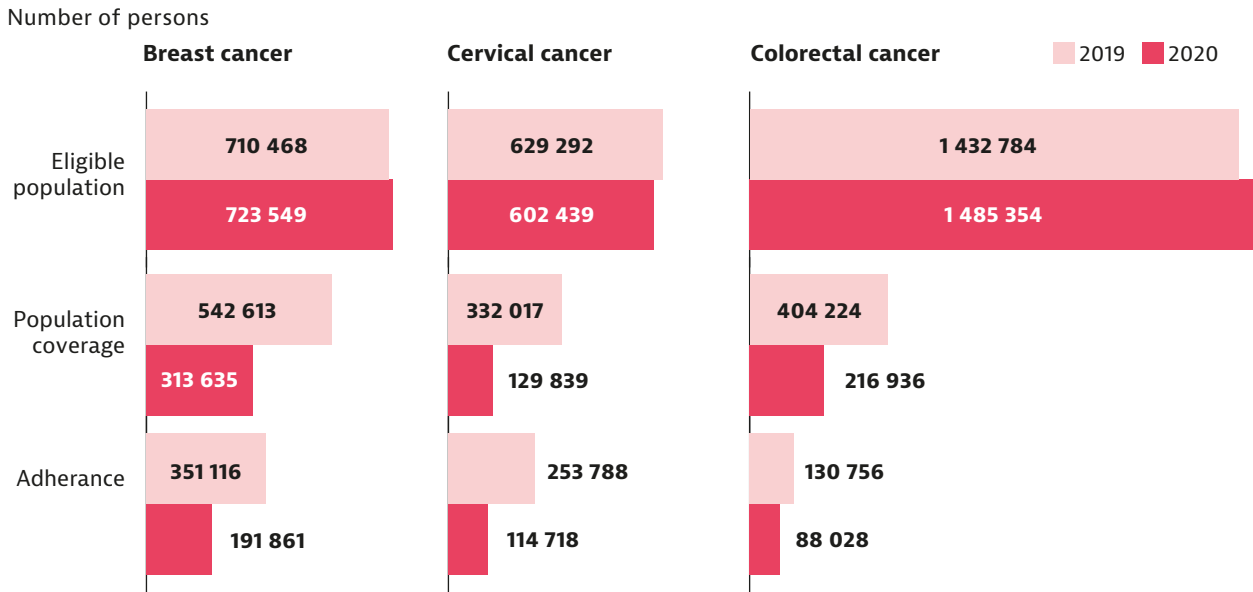
Colorectal cancer screening was also halted between March and July 2020. Invitations to screening decreased by 46 % on average. The reductions were most noticeable in the Southern Health Region (86 %) and the Lisbon and Tagus Valley Health Region (75 %). The number of people screened decreased by a third, and only the Northern Health Region saw the number of screenings increase by 6 %.

### Policies sought to minimise the impact of the pandemic on people with cancer

From the onset of the COVID-19 pandemic, Portugal adopted several mitigation strategies (including two full lockdowns) to minimise the effects of



**Figure 12. Cancer screening coverage decreased significantly during the pandemic**



Note: Eligible population data for breast cancer do not account for data from Madeira Island. Cervical and colorectal cancer screening data do not account for data from Madeira Island. Source: DGS (2021b).

successive waves (OECD/European Observatory on Health Systems and Policies, 2021). To reduce the effect of these restrictions on care accessibility for people with cancer, services such as medical oncology and radiotherapy consultations were among the last to be affected.

Based on a regulatory statement by the Directorate-General for Health, one of the changes to cancer care standards was the recommendation for differentiated hospital circuits and mandatory screening for SARS-CoV-2 infection for patients during chemotherapy and radiation therapy. Surgical care was guaranteed by safeguarding the three major oncology centres in Portugal from providing care for COVID-19 cancer patients to guarantee the human and logistical resources for this clinical activity. Additionally, moving from face-to-face consultations to teleconsultations (often provided via telephone) was also implemented. The number of teleconsultations was highest during times of a large rise of SARS-CoV-2 infections, in tandem with greater restrictions to the circulation of people. The implications of moving to teleconsultations on care quality – notably outcomes and experiences – are not clear, so it is likely that teleconsultations will not yet be embedded in routine care for people with cancer.

The rollout of the COVID-19 vaccination started in December 2020 in three phases, each of which outlined priority criteria such as risk of exposure, age and disease group. People undergoing active oncological treatment were included in Phase 2, which started in April 2021. The decision to receive the vaccine was discussed with the patient's medical oncologist, who would decide whether ongoing treatment should be stopped. By the beginning of Phase 2, bottlenecks related to vaccine supply and immunisation capacity had been overcome.



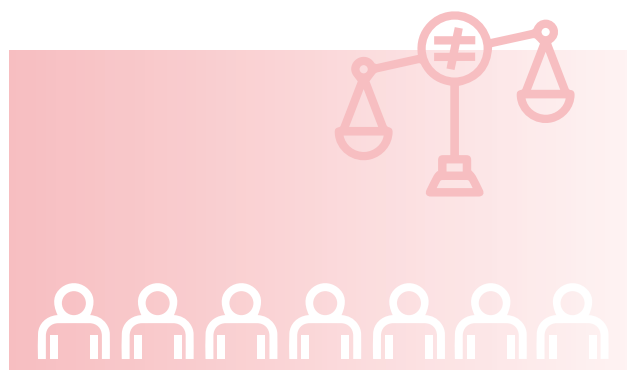
## 6. Spotlight on inequalities

The Portuguese National Health Service is a universal tax-financed health system. People with cancer are exempt from payment of user fees for consultations and complementary diagnostics prescribed during treatment and follow-up, including new and innovative oncology treatments. However, there are marked inequalities in cancer prevention, access to early diagnosis, care quality and outcomes.

- Behavioural risk factors for health are major drivers of cancer mortality in Portugal – notably alcohol consumption, smoking, dietary habits and low physical activity. Alcohol consumption among adults was 10 litres per capita in 2019, which is on a par with the EU average. Hazardous alcohol consumption was three times higher among people with lower (6 %) than higher (2 %) education levels.
- According to the EHIS, the proportion of daily smokers of cigarettes decreased to 12 % in 2019, which is below the EU average of 18 %. Smoking prevalence among men (16 %) was more than double that among women (7 %). Smoking rates were higher among people with lower education levels and lower incomes than among those with higher education levels and higher incomes.
- More than half (56 %) of the population aged 15 years and over was overweight or obese in 2019, affecting more men (61 %) than women (52 %), according to the EHIS. Prevalence was higher than the national average among people with lower (66 %) than higher (38 %) education levels.
- While the NHS funds all population-based cancer screening programmes (breast, cervical and colorectal), there are disparities in participation rates by education and geographical location according to the EHIS. The share of women reporting having had a cervical smear test was 53 % in 2019, with marked differences between women with higher (71 %) and lower (43 %) education levels. Uptake of colorectal cancer screening was 37 % higher among those living in cities than those living in rural areas.

Several policies have been implemented to improve access to high-quality cancer care and to reduce disparities, including national plans to reduce addictive behaviours and dependencies, for tobacco prevention and control, and to promote healthy eating and physical activity. Other policies were the planned launch of a reference network for oncology, implementation of multidisciplinary team meetings and introduction of maximum waiting times across the cancer care pathway.

To reduce the effect of restrictions due to the COVID-19 pandemic on care accessibility for people with cancer, services such as medical oncology, radiotherapy consultations and surgical treatments of cancer were prioritised among non-COVID related health care services. However, the pandemic disrupted population-based cancer screening activities. Screening and five-year survival rates require close monitoring in the coming years to identify the actual effects of such delays and forgone care, especially among the most vulnerable population groups who already face strong inequalities in cancer care.



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## Country abbreviations

Austria	AT	Denmark	DK	Hungary	HU	Luxembourg	LU	Romania	RO
Belgium	BE	Estonia	EE	Iceland	IS	Malta	MT	Slovak Republic	SK
Bulgaria	BG	Finland	FI	Ireland	IE	Netherlands	NL	Slovenia	SI
Croatia	HR	France	FR	Italy	IT	Norway	NO	Spain	ES
Cyprus	CY	Germany	DE	Latvia	LV	Poland	PL	Sweden	SE
Czech Republic	CZ	Greece	EL	Lithuania	LT	Portugal	PT		

European Cancer Inequalities Registry

# Country Cancer Profile 2023

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Registry contains a website and data tool developed by the Joint Research Centre of the European Commission (<https://cancer-inequalities.jrc.ec.europa.eu/>), as well as an alternating series of biennial Country Cancer Profiles and an overarching Report on Cancer Inequalities in Europe.

The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable comments and suggestions provided by national experts, the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

Each Country Cancer Profile provides a short synthesis of:

- the national cancer burden
- risk factors for cancer, focusing on behavioural and environment risk factors
- early detection programmes
- cancer care performance, focusing on accessibility, care quality, costs and the impact of COVID-19 on cancer care.

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