European Cancer Inequalities Registry

POLAND

Country Cancer Profile

2023

European Commission

OECD

BETTER POLICIES FOR BETTER LIVES

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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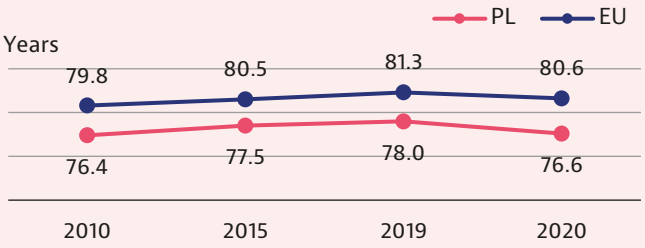

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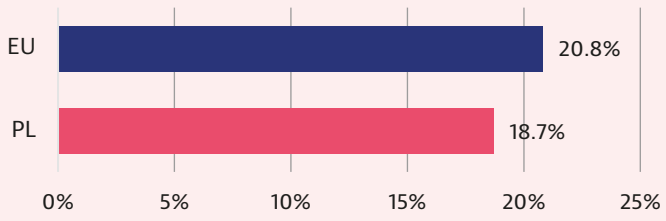

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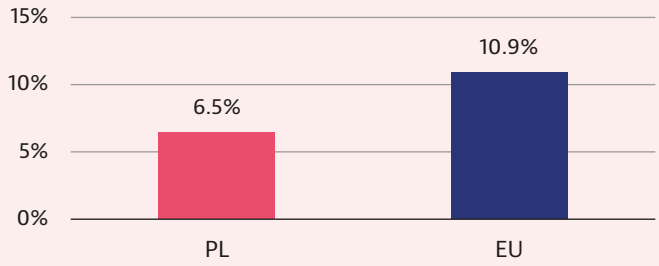
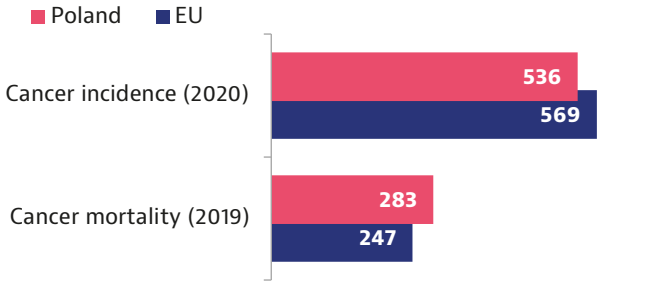


Source: Eurostat Database.

1. Highlights



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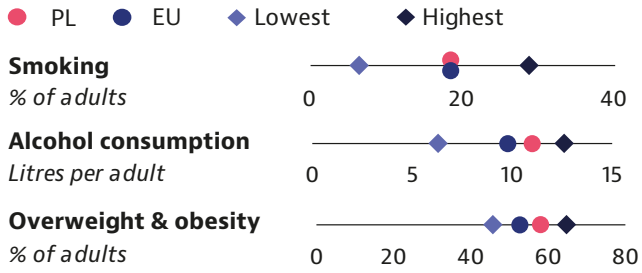
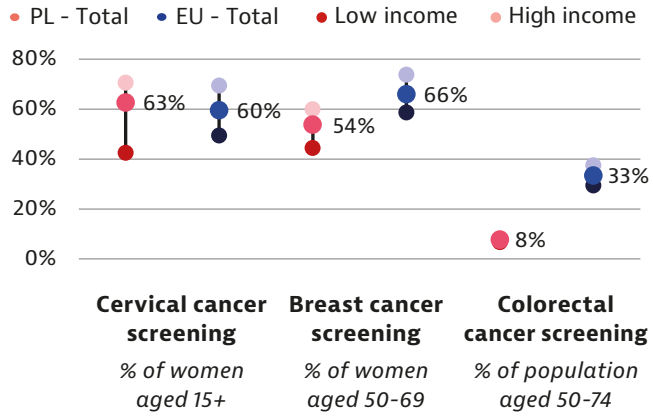
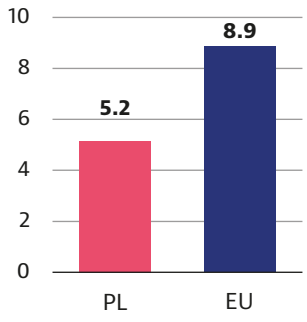
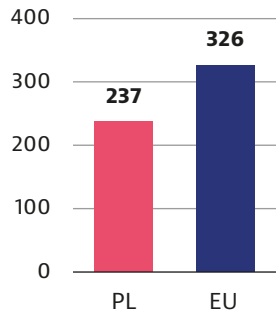






Number of radiation therapy centres per 100 000 population, 2007-22



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

Cancer in Poland

Overall cancer mortality in Poland is 15 % above the EU average, and has decreased more slowly over time. Lung cancer remains the main cause of death by cancer, followed by colorectal cancer. The National Cancer Strategy 2020-2030 aims to improve organisation of the cancer care system and to increase investment in prevention, human resources and innovation.

Risk factors and prevention policies

Cancer risk factors are higher in Poland than in other EU countries – particularly air pollution, overweight and obesity, and alcohol consumption. The National Health Programme 2021-2025 focuses on prevention and aims to improve diet, nutrition and physical activity to address obesity and overweight.

Early detection

Poland has national population-based screening programmes for breast and cervical cancer, but the colorectal screening programme has been suspended temporarily. Breast and colorectal cancer screening rates are low in Poland, unlike cervical screening rates, which are above the EU average. A pilot programme for lung cancer screening is being implemented.

Cancer care performance

Poland has implemented several policies to improve access to cancer care through fast diagnostic and treatment pathways and the National Oncology Network. However, several constraints hinder access to timely care, including a shortage of health professionals and limited numbers of cancer care units and radiotherapy centres. While care quality has improved over the past decade, five-year net survival is lower than in other EU countries for most cancer types, except for childhood leukaemia. Cancer expenditure per capita in Poland is lower than the EU average.

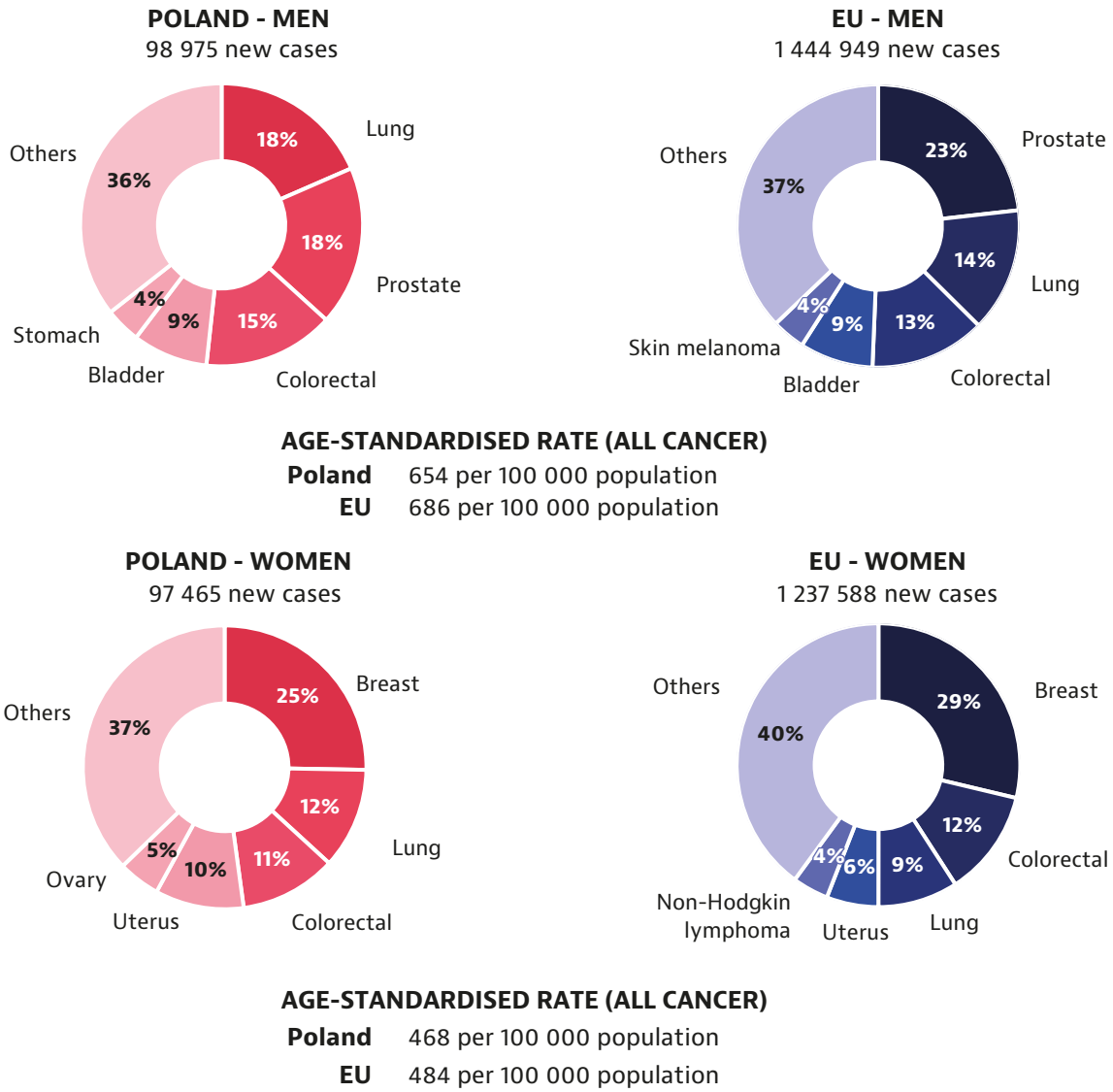
2. Cancer in Poland

More than 196 000 new cancer cases were expected in Poland in 2020

According to European Cancer Information System (ECIS) of the Joint Research Centre based on incidence trends from pre-pandemic years, almost 99 000 new cancer cases among men and 98 000 among women were expected in Poland in 2020 (Figure 1). This is equivalent to age-standardised incidence of 654 cases per 100 000 population among men (5 % lower than the EU average) and 468 per 100 000 among women (3 % lower than the EU average). For newly diagnosed men, lung (18 %), prostate (18 %), colorectal (15 %) and bladder (9 %) cancer occurred most frequently. Among women, breast (25 %), lung (12 %), colorectal (11 %) and uterus (10 %) cancer occurred most frequently. The most common cancers follow the pattern of prevalence across the EU, with the significant

Figure 1. Lung cancer incidence in Poland exceeded the EU average in 2020

Distribution of cancer incidence by sex in Poland and the EU



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.

exception of lung cancer, which is more frequent in Poland for both sexes. Box 1 provides information on rare cancers in Poland.

According to the Polish National Cancer Registry, 3 785 new cases of melanoma were registered in 2017 – an increase of 70 % over the past 10 years. Incidence of melanoma in Poland (10 per 100 000 population) was significantly lower than the EU average in 2018 (23 per 100 000). Skin melanoma was expected to constitute 2 % of new cancer cases in both men and women in 2020.

Gastric (stomach) cancer in Poland is usually diagnosed in advanced stages, with most cases in the Kujawsko-Pomorskie voievodship (i.e. main administrative unit in Poland). In 2020, rates were expected to be 21.6 per 100 000 population among men (vs. 21.4 per 100 000 in the EU) and 11.9 per 100 000 among women (vs. 12.6 per 100 000 in the EU). Gastric (stomach) cancer was expected to constitute 4 % of new cancer cases in men and 2 % in women, and to account for an overall mortality rate of 14 per 100 000 population, which is higher than the EU average (10 per 100 000).

While incidence rates are 40 % higher among men than women, prevalence of cancer was only 5 % lower among women than men in 2020 in Poland, according to estimates from IARC. The rate of treatable cancer mortality among women remained constant at about 45 cases per 100 000 population in 2018, which is about 1.7 times higher than the rate among men. Overall, the burden of cancer in the population, measured by disability-adjusted life years lost per 100 000 population, is higher in Poland than across the EU (6 978 vs. 5 757), according to Institute for Health Metrics and Evaluation data for 2019.

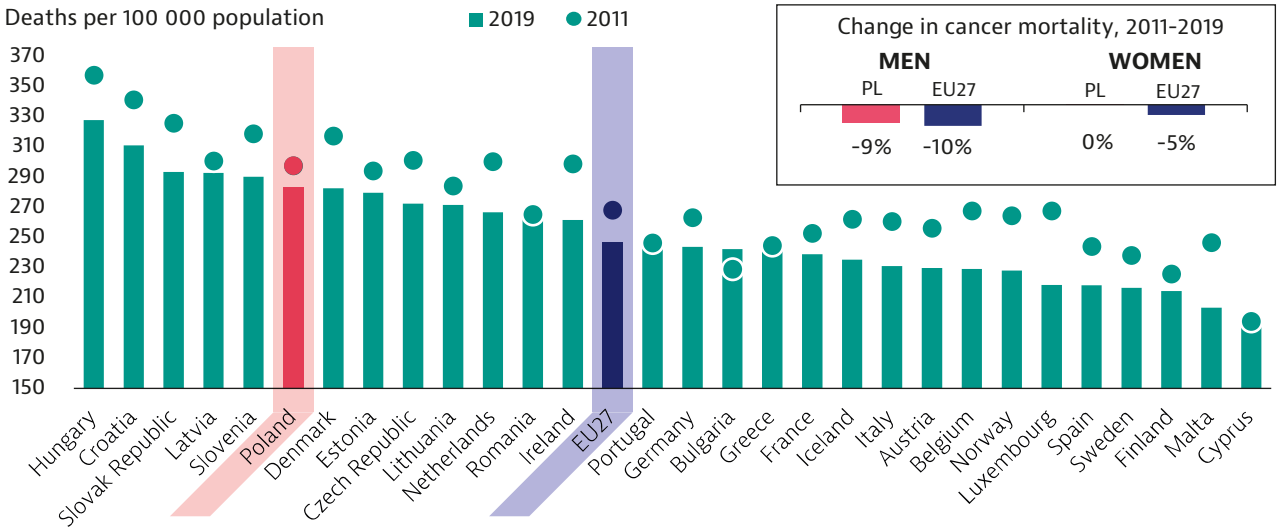
Box 1. Rare cancers in Poland

Among 186 types of rare cancer, about 43 800 new cases are expected in Poland each year, which equates to 22 % of all new cases (Gatta et al., 2013). The most common cancer types are squamous cell carcinomas of larynx and of the uteri cervix, and adenocarcinoma of ovary, two of which only affect women. Access to non-standard cancer treatment is limited, and is rarely covered by social health insurance (SHI).

Cancer mortality in Poland is well above the EU average

Poland had 283 cancer deaths per 100 000 population in 2019, which is 15 % higher the EU average of 247 deaths per 100 000. Overall mortality due to cancer remains among the highest in the EU, despite lower cancer incidence rates than across the EU among both men (5 % lower) and women (3 % lower). This indicates delays in diagnosis and signals potential problems in access to treatment.

Figure 2. Cancer mortality in Poland remained higher and decreased more slowly than the EU average



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

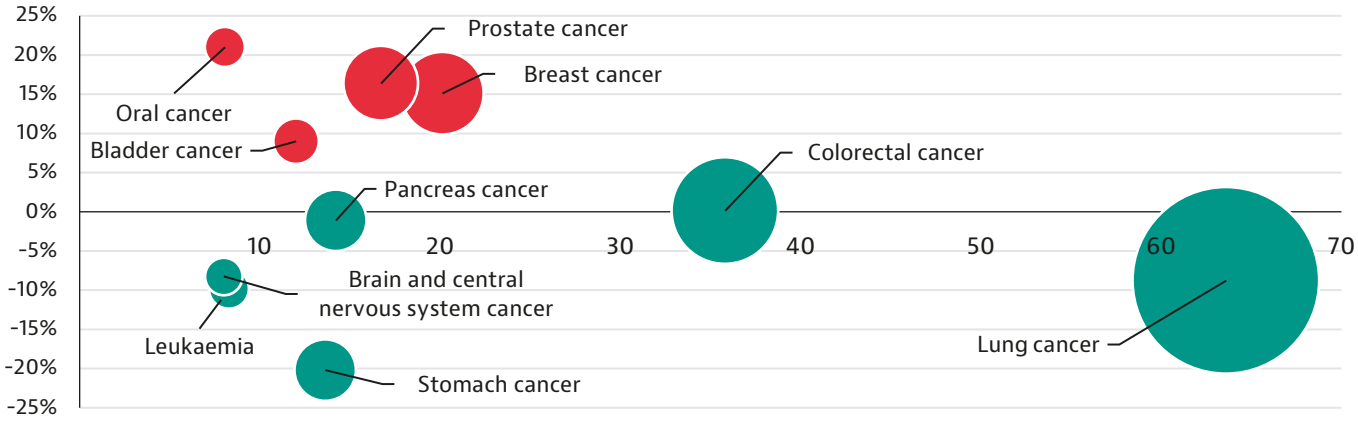
In 2011-2019, the number of cancer deaths per 100 000 population in Poland decreased by 5 %, compared to a reduction of 8 % in the EU. Mortality from lung cancer decreased by 9 %, but mortality from colorectal cancer remained constant. Cancer mortality among men decreased at a faster rate (9 %) than among women, for whom it remained constant (Figure 2). The gender disadvantage of women diagnosed with cancer in Poland became more pronounced in 2011-2019.

Lung and colorectal cancer remained the two most frequent causes of cancer deaths in Poland in 2019. Significant reductions in cancer mortality occurred for gastric (stomach) cancer (20 %), leukaemia (10 %), lung cancer (9 %) and brain and central nervous system cancer (8 %). By contrast, mortality from prostate, breast, oral and bladder cancers increased during 2011-2019 (Figure 3).

Overall, during 2000 and 2018, potential years of life lost due to malignant neoplasms saw a relative decrease of 29 % in Poland. The relative decrease was larger among men (35 %) than women (22 %), accounting for 1 886 and 1 404 years of life lost in 2018, respectively.

Figure 3. Lung and colorectal cancers remain two most frequent causes of cancer mortality in Poland

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



Age-standardised mortality rate per 100 000 population, 2019

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.

Several national plans have been implemented in recent years to improve cancer care

The National Cancer Strategy 2020-2030, adopted in 2019, sets objectives covering all activities in the field of oncology in Poland (Box 2). It aims to improve organisation of the cancer care system for adults (Box 3 describes paediatric cancer care in Poland). Particularly, it aims to increase investment in prevention, human resources and innovation; to standardise diagnostic and therapeutic pathways; and to continue data collection with cancer registries for quality monitoring. This aligns with the Europe's Beating Cancer Plan (European Commission, 2021), adjusted to country-specific conditions.

Box 2. The National Cancer Strategy 2020-2030 aims to improve delivery and quality of cancer care

The National Cancer Strategy 2020-2030 provides a policy framework to improve the performance of cancer care. It is structured around five main priorities:

- Investment in human resources – improving the workforce situation and the quality of education
- Investment in education, primary prevention and lifestyle – limiting incidence of cancer by reducing risks through primary cancer prevention
- Investment in secondary prevention – improving the effectiveness of screening for colorectal, breast, cervical and lung cancers
- Investment in science and innovation – increasing the potential of scientific research and innovative projects to make the most effective diagnostic and therapeutic solutions available for patients
- Investment in the cancer care system, notably through the National Oncology Network – improving organisation of the delivery system to provide greater care coordination and access to high-quality diagnostic and therapeutic pathways

The National Oncology Network launched a pilot programme on coordination of care for breast, lung, ovarian, colon and prostate cancers. Existing public and private providers of cancer care are grouped into three reference levels, each with specific competencies, with a high extent of coordination across levels. The National Oncology Council coordinates the Network, defines standards and provides accreditation.

In addition, the government launched the National Health Programme 2021-2025. One of its key objectives is to improve diet, nutrition and physical activity in order to address obesity and overweight. Several initiatives have been implemented, including development of a website dedicated to healthy eating, release of a public e-health tool to promote healthy diets, introduction of a health education campaign called Prevention Wednesdays and creation of a team to monitor and review existing preventive programmes.

Box 3. A separate system for paediatric cancer exists in Poland

The age-standardised incidence rate of paediatric cancer in children aged under 15 years in Poland was 15 per 100 000 in 2020, which is similar to the EU average. Paediatric cancer care is of much higher quality than adult cancer care. A separate organisation structure comprising 17 regional centres is dedicated to paediatric cancer treatment. Large centres for paediatric cancer are located in Kielce, Poznań, Cracow, Katowice, Opole, Białystok, Toruń and Bydgoszcz, in addition to the capital city Warsaw.

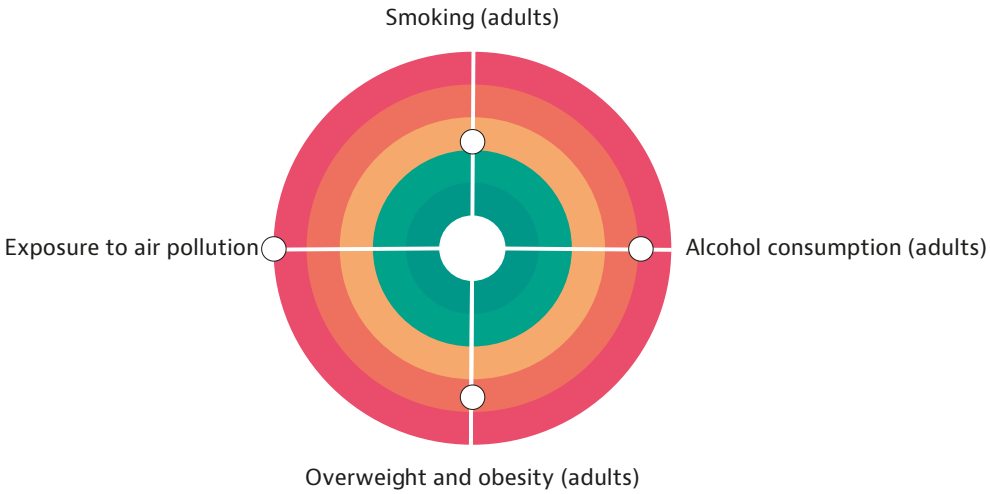
The well-developed network of home hospices for children with cancer served about 150 children each year in the last decade. The Polish Association for Oncology and Children's Haematology is a leading centre in the country and in Europe, co-operating closely with the European Society for Paediatric Oncology.

3. Risk factors and prevention policies

Poland performs less well than the EU average on various risk factors for cancer

Prevalence of air pollution, overweight, obesity and alcohol consumption are higher risk factors for cancer in Poland than across the EU, but smoking prevalence is close to the EU average (Figure 4). Overall, behavioural and environmental risk factors account for half of all deaths in Poland (OECD, 2021), calling for better and effective prevention strategies. In 2020, spending on preventive care represented only 1.9 % of current health expenditure, which is lower than the EU average of 3.4 %. The National Health Programme 2021-2025 aims to improve prevention of major risk factors for cancer, and gradually introduces previously absent HPV vaccination (Box 4).

Figure 4. Air pollution, overweight, obesity and alcohol consumption are significant risk factors



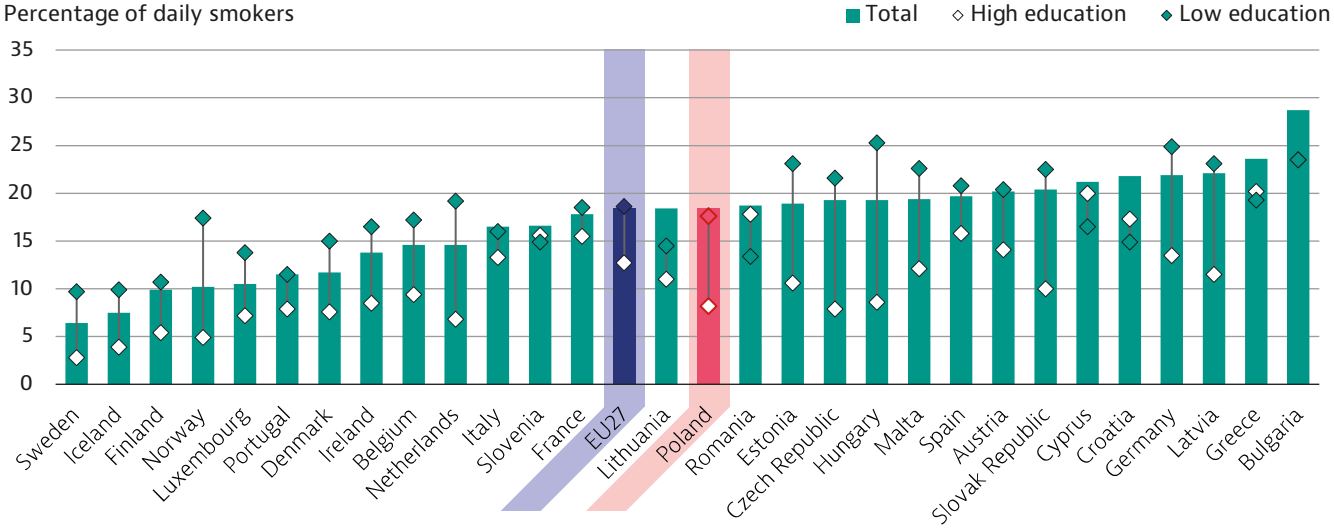
Note: The closer the dot is to the centre, the better the country performs compared to other EU countries. No country is in the white "target area" as there is room for progress in all countries in all areas.
Sources: OECD calculations based on the European Health Interview Survey (EHIS) 2019 for smoking and overweight/obesity rates, OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health (GISAH) for alcohol consumption (2020) and Eurostat for air pollution (2019).

Socioeconomic disparities in smoking prevalence are marked

In 2019, 18 % of the Polish population reported daily smoking – the same as the EU average. Nevertheless, as in many other EU countries, socioeconomic inequalities in smoking prevalence are marked. Daily smoking prevalence was 25 % among people on lower incomes, compared to 16 % among people on higher incomes. In addition, the proportion of daily smokers was twice as high among people with lower (18 %) than higher (8 %) education levels (Figure 5). Disparities by sex and age are also present: adults aged 15-64 years (20 %) smoked more than adults aged 65 years and over (13 %), and men (23 %) smoked more than women (14 %).

Prevalence of daily smokers decreased by a third between 2011 and 2019 – particularly among men. Poland introduced comprehensive tobacco control regulations in the 1990s, which led to a reduction in nicotine sales. Further restrictions aimed to reduce passive smoking and e-cigarettes by extending the ban on smoking in public spaces and introducing taxation of innovative electronic nicotine products in 2016. However, tax increases on traditional tobacco products were suspended in 2015.

Figure 5. Prevalence of daily smokers is close to the EU average, but social inequalities are marked



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

Overall alcohol consumption is among the highest across the EU

Alcohol consumption in Poland was well above the EU average in 2020, at 11 litres of pure alcohol on average per year among the population aged 15 years and over compared to 9.8 litres across the EU (Figure 6). Alcohol consumption has continued to grow since the early 2000s, though the increase was reduced with the introduction of higher tax rates in 2008. Hazardous alcohol behaviour is observed for 2.2 % of adults in Poland, which is slightly below the EU average (2.7 %). Disparities in alcohol consumption exist according to income and education: Poles with higher education levels and high incomes consume more alcohol than those with lower education levels and incomes.

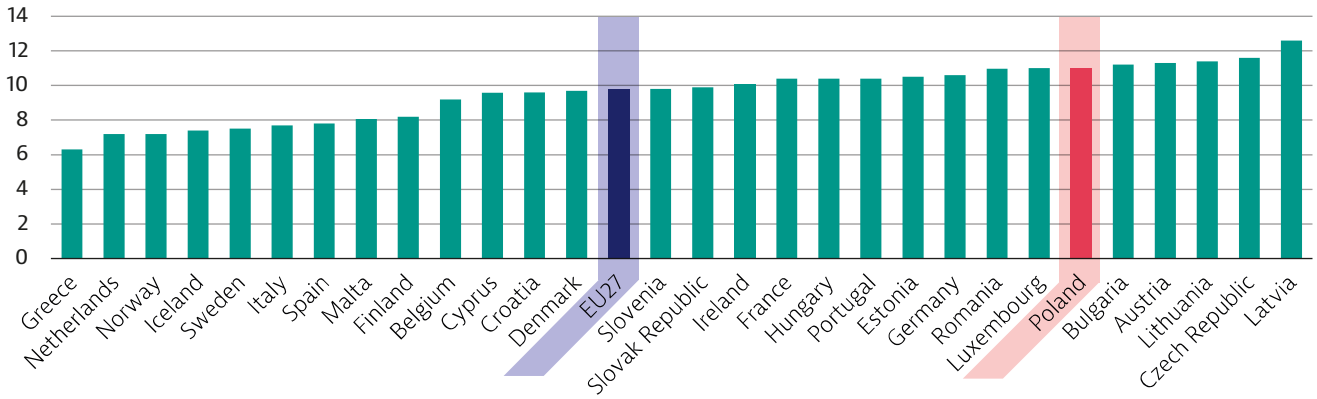
In Poland, as in a number of central and eastern European countries, weekly alcohol consumption is most prevalent among people aged 30-44 years, while in the majority of EU countries it is more prevalent among people aged 45-59 years. This may result from cultural differences in alcohol consumption and its significant role in social events.

Overall prevalence of cancer cases attributable to excessive alcohol drinking in Poland is similar to that in other EU countries, but it is much higher among men than women. Alcohol contributed to 19.6 new cases of cancer (particularly colorectal cancer) per 100 000 men in Poland, exceeding the EU average of 17.9 per 100 000. According to recent OECD (2021) estimates, the reduction in premature mortality due to alcohol consumption (by 1.5 years) in Poland will be one of the largest by 2050, yet it will remain at the highest level across the EU.

Alcohol control measures are scarce at the national level; for example, beer advertising is allowed since 2001 and promotion of alcoholic beverages on social media is not banned. Although pricing policies aimed at reducing alcohol consumption in Poland are expected to perform particularly well based on the experience of several countries, only

Figure 6. Alcohol consumption in Poland exceeds the EU average by 1.2 litres per capita

Litres per capita



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

minor initiatives related to price policies have been implemented. In 2020, excise duty was increased by 10 % on all alcoholic drinks, but it remains below the level in the 1990s. The government introduced an additional fee on alcohol sold in small bottles of up to 300 ml in 2021, which enhanced sales of 350 ml bottles. Local governments in Poland have freedom to limit physical access to alcohol, by restricting hours and places in which alcohol can be purchased, but only some municipalities apply such policies.

More than half of the population is overweight and obese

In 2019, 58 % of adults were overweight or obese in Poland and the proportions have grown rapidly since 2014, according to the EHIS. Prevalence of obesity is expected to reach 30 % by 2028. Currently, obesity causes reductions in life expectancy by 3.9 years, a trend driven in part by unhealthy lifestyles – such as poor diets and a lack of physical activity – especially among women. While prevalence of people undertaking health-enhancing physical activity increased in the population aged 15 years and over between 2014 (17 %) and 2019 (20 %), it remained below the EU average of 33 %. In 2019, Poles with higher education levels were more physically active (28 %; an increase of 3.4 percentage points from 2014) than those with lower education levels (21 %; an increase of 4.5 percentage points). In addition to policies aimed at promoting healthy lifestyles, a sugar tax was introduced on beverages with caffeine and taurine in 2021, and food marketing in schools has been regulated since 2015. Other initiatives include educational activities in schools.

Exposure to air pollution is the second highest in the EU

In 2019, exposure to PM_{10}[1] in Poland reached 27 µg/m^3, which is higher than the EU average of 20.5 µg/m^3. Poland also had the second highest concentration of $PM_{2.5}$ in the EU (19 µg/m^3) – 1.5 times higher than the EU average (13 µg/m^3). According to the Institute for Health Metrics and Evaluation, ozone and $PM_{2.5}$ exposure accounted for an estimated 8 % of all deaths in Poland in 2019, a rate twice as high as the average across the EU. Exposure to chemical pollutants among workers breathing in smoke, fumes, powder or dust was more prevalent in Poland than the EU average because of the high proportion among men (32.9 % in Poland vs. 24.6 % across the EU). The high prevalence among men results from the predominantly male employment in high-skilled manual occupations associated with pollutants.

Box 4. Poland lags behind other EU countries in prevention of human papillomavirus-induced cancers

In 2020, coverage of Polish teenagers vaccinated against HPV was estimated at between 7.5 % and 10 %, according to national data. Since November 2021, SHI has refunded 50 % of the cost of the HPV vaccine for girls and boys. Vaccination was recommended for girls aged 11 years and over between 2008 and 2021, and is now recommended for both sexes aged 9-14 years.

Some local governments had already implemented funding of prophylactic HPV vaccination in 2010. The number of municipalities providing free HPV vaccination was unevenly distributed across voievodships in 2021, ranging from 18 in Dolnośląskie and Pomorskie to 1 or 2 in Małopolskie, Podlaskie and Świętokrzyskie, according to data from the Ministry of Health.

1 *Particulate matter (PM) is classified according to size: PM_{10} refers to particles less than 10 micrometres in diameter; $PM_{2.5}$ to particles less than 2.5 micrometres in diameter.*

4. Early detection

Screening programmes are in place for breast, colorectal and cervical cancer in Poland

Nationwide free population-based screening programmes (screening offered to a specific at-risk target population) for breast, cervical and colorectal cancers were implemented in Poland in the early 2000s. Recently, a pilot screening for lung cancer was implemented. The target age for breast cancer screening is 50-69 years, and recommended frequency is every two years. Since the programme implementation, the national rollout was achieved in 2007.

The cervical screening programme started in 2007, targeting women aged 25-59 years every three years. While the coverage rate increased by 41 % between 2007 and 2010, only 17 % of the target population were screened in 2019, suggesting room for improvement.

The colorectal cancer screening programme started in 2000, targeting the population aged 50-64 years, but it was suspended in January 2022 to change in the funding source from the Ministry of Health to the National Health Fund – the state health service provider. The programme has been reintroduced in October 2022.

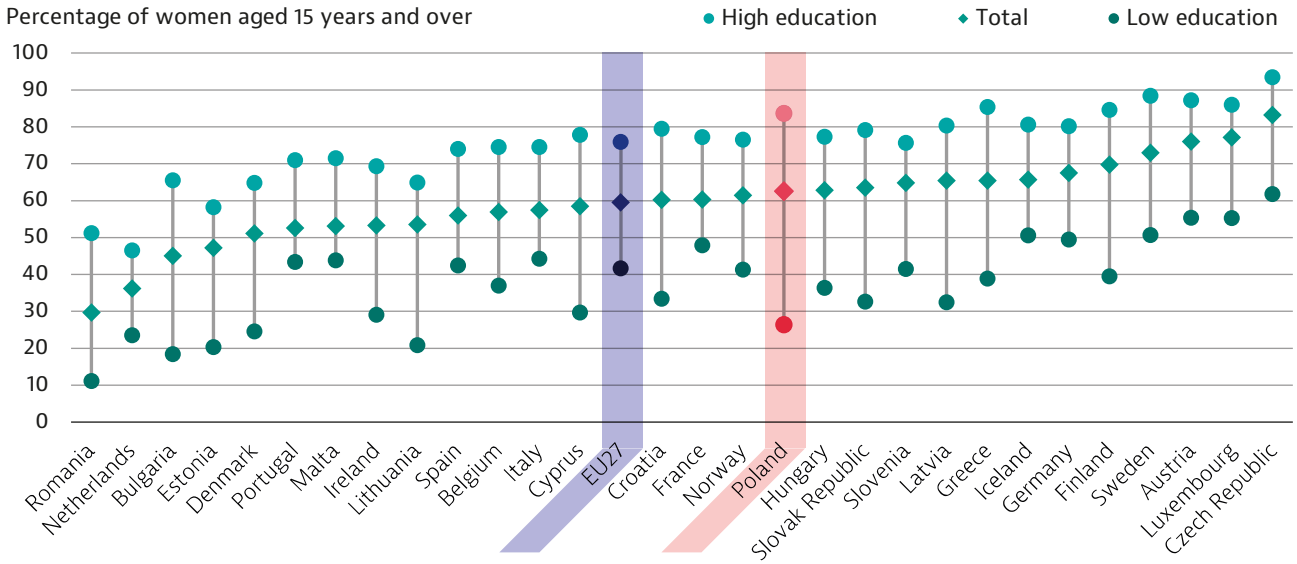
Rates of breast cancer screening are the seventh lowest in the EU

In 2019, 54 % of women aged 50-69 years reported having had a mammogram in the past two years. This is the seventh lowest share in the EU – below the EU average (66 %). Inequalities in breast cancer screening rates by educational attainment and income are marked. The screening rate is more than twice as high among women with higher (67 %) than lower (33 %) education levels, and this education gap is the second largest in the EU. Inequalities also exist by income, but the gap is similar to the EU average (about 15 percentage points).

While cervical cancer screening uptake is above the EU average, inequalities by education are stark

In 2019, 63 % of women aged 15 years and over reported having had a smear test in the prior three years, which is slightly above the EU average of 59.5 % (Figure 7). However, inequalities by education and income levels are larger than the EU averages. The difference in cervical screening uptake between women with higher (84 %) and lower (26 %) education levels is 58 percentage points, and uptake was 28 percentage points higher among women on first (71 %) than fifth (42 %) income quintile.

Figure 7. Poland has marked inequalities in cervical cancer screening by education level



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.

Cervical cancer screening was also somewhat more common among women living in cities (67 %) than in rural areas (57 %).

Despite a national colorectal cancer screening programme introduced in 2000, uptake was very low

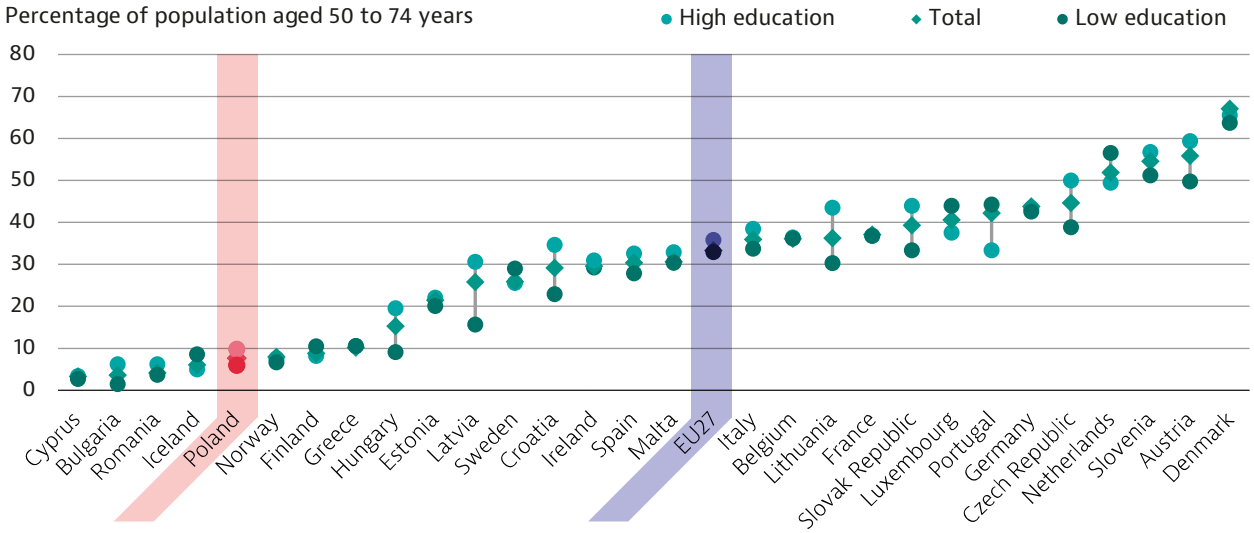
In Poland, participation in colorectal cancer screening has historically been low (18 % of the target population in 2019). The programme was based on colonoscopy provided in health care units unevenly distributed across geographical regions. The number of units offering opportunistic tests varied substantially between voievodships, ranging from 14 in Śląskie to 1 each in Lubuskie, Łódzkie, Podlaskie and Warmińsko-Mazurskie, and 0 in Zachodniopomorskie. The Supreme Audit Office published a report in 2017 (NIK, 2017), pointing to limited participation in the cancer screening programme as well as limited effectiveness of educational campaigns accompanying the programme.

Based on self-reported data from the EHIS, the proportion of Poles screened for colorectal cancer within the previous two years in 2019 was among the lowest in the EU, at 8 % of the population aged 50-74 years. A slightly higher proportion of coverage was seen among those living in urban (8 %) than rural (5 %) areas, and among those with higher (10 %) than lower (6 %) education levels (Figure 8). Disparities by gender and income levels were smaller.

Poland introduced a pilot lung cancer prevention programme

Poland introduced a pilot programme for lung cancer education and screening in 2021-2023, targeting the high-risk population of heavy smokers (people consuming a pack of cigarettes per day for 20 years or equivalent) aged 55-74 years, and heavy smokers aged 50-74 years with increased risk of lung cancer. In 2021, 2 174 low-dose computerised tomography (CT) tests were conducted within the programme. As of September 2022, 17 units conduct the programme in the seven voivodeships with highest mortality from lung cancer. The units are located in large cities, with more than a third in Dolnośląskie voivodeship. The programme is co-funded by the European Social Fund.

Figure 8. Colorectal cancer screening uptake was almost three times lower than the EU average



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of population aged 50 to 74 years who reported having a faecal occult blood test in the past two years.
Source: Eurostat Database (EHIS). Data refer to 2019.

5. Cancer care performance

5.1 Accessibility

Cancer care is part of the Polish public health care system, but financial barriers hinder access

The public health system in Poland is governed by the Ministry of Health at the national level, in co-operation with local governments organised in a three-tier administration system, with voivodeships at the highest tier. The National Health Fund, divided into 16 branches (one for each voivodeship), is the sole purchaser of health care services provided to patients within the SHI system. Cancer care is organised within the SHI system based on the National Cancer Programme, developed in accordance with EU recommendations and WHO guidelines. Oncology services covered by SHI include prevention programmes, ambulatory health care, hospitalisation, physiotherapy, and palliative and hospital care.

However, out-of-pocket spending in Poland is substantial, representing 20 % of total health expediture in 2019 (compared to 15 % on average across the EU). Payments for outpatient medicines account for 13 % of out-of-pocket spending, driving catastrophic spending. While exemption mechanisms for outpatient prescription charges were introduced in 2016 for older people and in 2020 for pregnant women, mechanisms to protect the most vulnerable population groups (such as chronic patients, including cancer patients) are weak (OECD/European Observatory on Health Systems and Policies, 2021). Private health care services are often used to supplement the public sector, especially with regard to reducing waiting times and improving access to pharmaceutical products.

Access to new cancer therapies is limited in Poland

Polish cancer patients have access to only 30 % of the medicines covered by standard health insurance in the EU, and to fewer than 50 % of the innovative cancer therapies registered in Europe between 2004 and 2017. In addition, prices of most cancer medicines were among the highest in a study of 16 countries, including European countries (Moye-Holz & Vogler, 2022). More than a third of newly authorised medicines in Poland between 2012 and 2018 were for oncology (Iwańczuk et al., 2019).

In addition, the proportion of out-of-pocket contributions among expenditure on drugs by cancer patients increased by 44 % between 2014 and 2016. Poland has adopted the risk-sharing approach to pharmaceuticals, which implies that the financial risk of failed treatment using innovative drugs is shared between the public health care system and pharmaceutical company. As a result, the drug authorization procedures are lengthened and innovative cancer drugs are available with delay, although the efficiency of public spending on innovative cancer drugs is increased.

Several initiatives aim to improve accessibility of cancer care in Poland

Efforts to improve accessibility of cancer care in Poland have been made for over a decade. The previous National Cancer Strategy 2015-2024 introduced the Oncology Package, along with a fast diagnostic pathway to reduce waiting times for diagnostic investigations and specialist consultations. Within this pathway, primary health care physicians were able to refer to specialists according to guidelines, with maximum waiting times for diagnosis and treatment.

To be entitled to the fast diagnostic pathway, a patient needs to receive a diagnostics and oncology treatment card from a primary care or outpatient specialist doctor. This card ensures access to diagnostics and treatment within a guaranteed maximum waiting time of 28 days from visiting the primary care doctor to basic diagnostics; 21 days from specialist consultation to in-depth diagnostics; and 14 days from multidisciplinary team meeting (comprising an oncologist, radiotherapy specialist and oncological surgeon) to the start of treatment. Introduction of the fast diagnostic pathway resulted in marginal improvement in waiting times for services covered by the Oncology Package: in 2016, more than half of patients started treatment within seven weeks. However, waiting time for services other than those covered by the Oncology Package increased – for example, they doubled for CT and magnetic resonance imaging (MRI) scans between 2015 and 2016. This led to a revision of the National Cancer Strategy 2015-2024. Long waiting times also occurred for follow-up cancer care. Waiting times to physiotherapy in urgent cases ranged from 28 to

156 days, and in regular cases from 123 to 892 days, depending on the type of therapy.

The revised National Cancer Strategy 2020-2030 was accepted by the government in 2019. It explicitly aimed to ensure equal access to high-quality oncological care services, mainly via organisational changes to improve coordination of relevant elements in the health care system. The newly developed framework of the National Oncology Network aims to ensure efficient coordination of cancer care and allocation of resources, standardised diagnostic and therapeutic pathways, and ongoing quality monitoring using digitalised cancer registries. Pilot programmes for the Network started in October 2019, enrolling about 27 000 cancer patients by the end of 2021. These focus on coordination of care for breast, lung, ovarian, colon and prostate cancers, and on evaluation of the quality of cancer care services.

The shortage of health professionals in Poland affects access to cancer care

Poland, like other central and eastern European countries, has low numbers of physicians per capita. The ratio of pathologists per million population in 2019 was slightly over 3, which is the lowest in the EU. The largest number of active pathologists responsible for testing tissues for the presence of cancer cells was in Mazowieckie (163), and the lowest in Opolskie (6) and Lubuskie (15) voievodship, according to the Supreme Audit Office report.

Incentives to specialise in radiotherapy have been implemented within Poland's cancer strategies since the mid-2010s, but have not resulted in significant improvements in availability of health workers. One of the aims of the National Cancer Strategy 2020-2030 is investment in education of medical specialists, including radiologists. The initiative encompasses increasing the quota of medicine students and offering financial incentives to enhance the choice of medical specialisations associated with cancer care. Further, training will be provided to enhancing the development of qualifications.

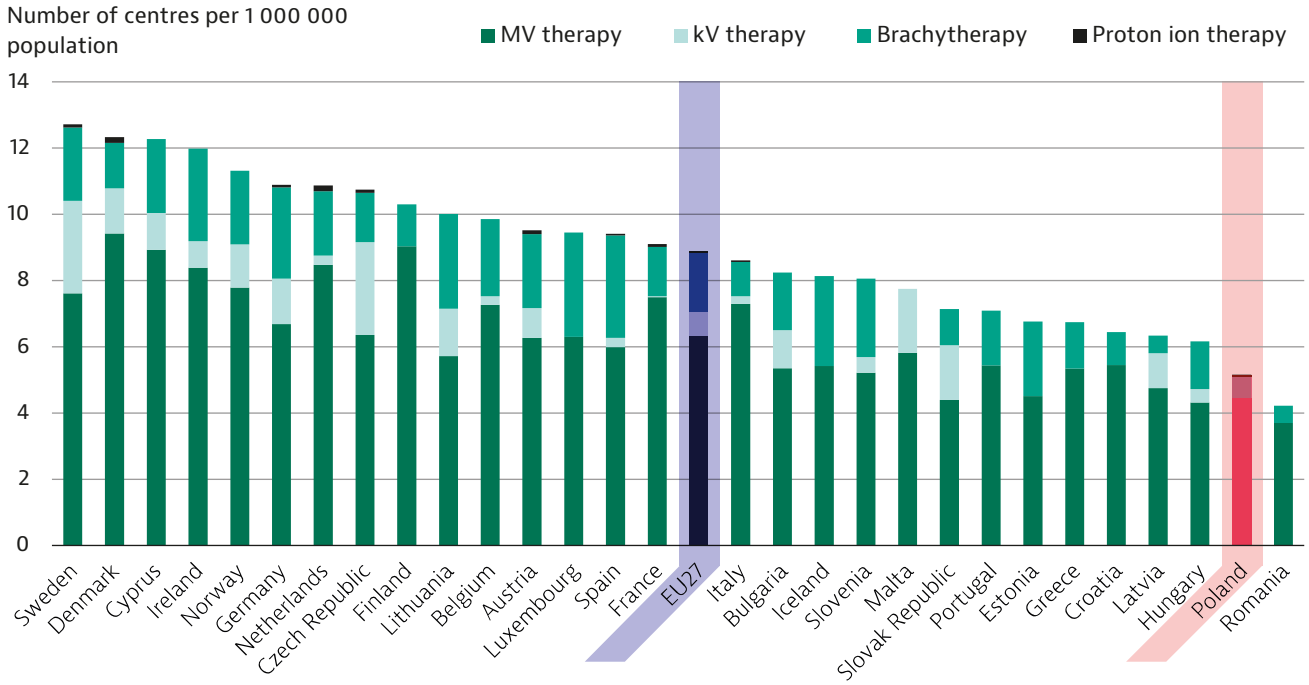
Overall, in 2015 Poland had almost 6 physicians with an oncology speciality per 100 000 population. In 2018, according to national statistics, 909 clinical oncologists, 826 oncological surgeons, 480 haematologists, 245 oncologic gynaecologists and 208 specialists in paediatric oncology and haematology were registered and working (Ministry of Health, 2018).

The number of radiotherapy centres is among the lowest among EU countries

Timely delivery of cancer care is not guaranteed in the public sector in Poland because of the limited number of cancer care centres. The first breast cancer unit opened in 2019, and the country now has two (in Białystok and Warsaw). A plan to establish a colorectal cancer unit was completed in 2021.

Units providing oncological care are unequally distributed across voivodeships and between urban and rural areas. For example, most units organising

Figure 9. Poland has the second lowest density of radiotherapy centres in the EU



Note: kV stands for kilovolt. The EU27 average is unweighted (calculated by the OECD).
Source: International Atomic Energy Agency.

opportunistic colorectal cancer screening are located in large cities. In addition, the one proton therapy centre in Poland, located in Cracow, provides treatment for eye cancer refunded by SHI.

Overall, Poland has 5 radiotherapy centres per million inhabitants, which is 70 % below the EU average of 9 per million (Figure 9). Poland remains among the countries with the lowest density of centres providing megavolt (MV) radiation therapy, with 4 centres per million inhabitants (compared to an EU average of 6). Brachytherapy remains a highly specialised technique, and is less available than in most other EU countries (1 centre per million inhabitants vs. 2 per million across the EU).

Radiation therapy in Poland is conducted in 35 units, a third of which are located in three voivodships (Śląskie, Małopolskie and Mazowieckie). Since the early 2000s, investment in radiation therapy equipment has been slow and steady, and further investment is planned as part of the National Cancer Strategy 2020-2030, but increases in equipment remain unmatched by supply of specialised medical personnel capable of performing radiotherapy.

Poland performs relatively well on palliative care, with a network of home hospices

Palliative care in Poland is ranked as the fifth most developed by the International Observatory on End of Life Care. The network of palliative care units is well developed, largely due to numerous out-patient hospices (so called 'home hospices') serving patients at their place of living. Their development dates back to the 1990s, when efforts by non-governmental organisations were met with strong social support, including private donations. Since 2013, the National Health Fund has co-operated with home hospices by funding palliative care services provided at home hospices and in hospitals. Currently, about 55 % of palliative care patients are treated in a home hospice.

However, access to end-of-life care in palliative wards remains limited. In 10 of the 16 voievodships, the number of beds in palliative care units (443 in total) was insufficient in 2018. Access to palliative care wards differs significantly between voievodships, and is most limited in Mazowieckie, Lubelskie and Podlaskie. Use of palliative care services by patients living in urban areas is 30 % higher than among those in rural areas. Informal provision of end-of-life care by family members and non-governmental organisations is frequent in Poland, complementing medical services at the end of life.

5.2 Quality

Quality of cancer care is lower in Poland than the EU averages for most types of cancer

Five-year net survival, a marker of care quality, increased in Poland between 2004 and 2014 across the most common cancer types, although the increases were lower than those across the EU, so the gap between the EU average and Poland increased.

For all cancer types except childhood leukaemia, five-year net survival rates for patients diagnosed between 2010 and 2014 were lower than the EU averages (Figure 10). Among adults, the highest survival rates were for prostate (78 % vs. 87 % across the EU) and breast cancer (77 % vs. 83 % across the EU), while survival remained poor and close to the EU average for lung cancer (14 % vs. 15 % across the EU). Women in Poland diagnosed with breast cancer at an advanced stage faced five-year net survival of 43 % in 2010-2014.

Figure 10. Five-year cancer survival rates are lower than the EU average except for childhood leukaemia

Prostate cancer	Childhood leukaemia	Breast cancer	Cervical cancer	Colon cancer	Lung cancer
Poland: 78%	Poland: 87%	Poland: 77%	Poland: 55%	Poland: 53%	Poland: 14%
EU24: 87%	EU24: 82%	EU24: 83%	EU24: 64%	EU24: 60%	EU24: 15%

Note: Data refer to people diagnosed between 2010 and 2014. Childhood leukaemia refers to acute lymphoblastic cancer.
Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.

Five-year survival rates in Poland are well below the EU averages for cervical cancer (by 9 percentage points) and colon cancer (by 7 percentage points). Poland also lags behind the EU averages for five-year survival rates for melanoma (70 % vs. 83 %), rectum cancer (48 % vs. 59 %) and gastric (stomach) cancer (21 % vs. 27 %).

Substantial differences in cancer survival rates occur between voivodeships: the five-year survival rate for breast cancer ranges from 70 % in Podkarpackie to 80 % in Mazowieckie (Ministry of Health, 2018). Even larger differences occur for cervical cancer (from 47 % in Śląskie to 64 % in Podlaskie voievodship). These inequalities reflect regional differences in access to cancer diagnosis and treatment – especially cancer surgery. Heterogeneity in quality of cancer care across regions has also been highlighted previously. For example, surgical treatment for breast cancer was conducted in 167 health care units in 2020, among which only about 13 % provided good care quality, according to a recent evaluation (Maciejczyk et al., 2020). These weaknesses relate in part to a lack of quality control in Poland.

Cancer care delivery is fragmented and characterised by wide variability of practice between units

A comprehensive cancer infrastructure is being developed as a result of the National Cancer Strategy for 2020-2030. The Oncology Network is being piloted slowly. Separate institutions are responsible for delivering radiotherapy, chemotherapy and surgery in Poland, and follow-up and delivery of cancer treatment are fragmented. No specific body is responsible for organising cancer care delivery or ensuring quality monitoring and control.

While the National Cancer Strategy for 2015-2024 introduced cancer care coordinators in all oncological care units, their capacity to coordinate care met several barriers (Dela et al., 2020). These included unclear definitions of the role, a lack of tools at a system level and high workload (which was reported by 43 % of cancer care coordinators). More than half of the oncological care units audited by the Supreme Audit Office were unable to perform pathomorphology tests owing to a lack of personnel and equipment. A large gap in pathomorphology analyses and clinical practice in radiotherapy treatment was also seen between specialised cancer centres and smaller health facilities. Smaller units were characterised by significantly larger postoperative mortality. A fifth of oncological repeat surgeries took place in a different treatment centre from the original one.

Overall, because of a lack of timely quality monitoring in Poland, the 2015 reform introduced strong incentives to provide cancer care services in all care units, which enhanced inequalities in access to high-quality services and increased the burden on the care delivery system. As a result, half of cancer patients were treated in 1 % top quality cancer care units in Poland after 2015 (Ministry of Health, 2018).

Extensive regulation of innovative pharmaceutical treatment programmes limits their potential impact

Currently, 30 different Drug Programmes (see Section 5.3) in cancer care offer 141 products, 25 % of which were only added in 2019. Delays in drugs receiving approval are frequent, and uptake of newly authorised drugs is slower and lower in Poland than in other EU countries.

The lengthy drug authorisation process in Poland results in part from the use of risk-sharing payment arrangements, with close monitoring of effectiveness of pharmaceuticals. For example, use of chemotherapy drugs is decided individually for each patient. Payment exemption is continued only if the treatment is found effective over three months, which involves a heavy administrative burden.

Several quality monitoring programmes exist, but they are uncoordinated

Systematic monitoring of cancer care at the central level in Poland has been in place since 2019, with development of indicators to measure the quality of oncological care and patient safety. As of 2022, monitoring is conducted in parallel by a number of stakeholders, including the Association of Polish Oncologists, the Cancer Society, the Ministry of Health and – importantly – the Patients' Association. Shared ownership and patients' involvement enhance rigorous monitoring. The Supreme Audit Office also carries out periodic evaluations. Formally, monitoring of cancer care quality is conducted on a regular basis within two programmes: the breast cancer screening programme and as part of the pilot programmes of the National Oncology Network. However, assessment criteria remain unclear because in most cases target values for quality indicators have not been established, highlighting that a more rigorous and consolidated approach to quality monitoring is needed.

Cancer registries exist and are centralised

The National Cancer Registry was set up in 2010-2013 as a result of a research project

conducted by the Maria Skłodowska-Curie Institute of Oncology. It integrates data from the regional to the centralised level, ensuring high quality of data collection using online tools. The integrated platform for data collection and analysis has reduced the workload and improved accessibility to cancer registries in Poland. In addition, predefined analytical tools enable faster knowledge extraction. However, data from the National Cancer Registry are not used regularly to assess quality of cancer care and highlight inequalities.

The National Cancer Strategy 2020-2030 aims to extend public coverage to psychological care

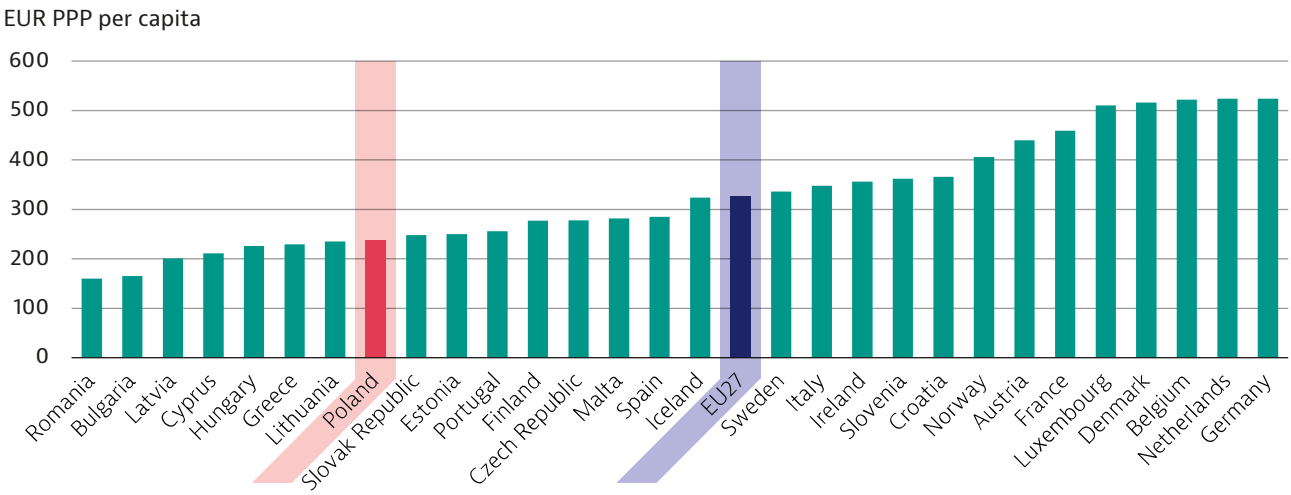
Psychological care for cancer patients is covered by SHI, as for all other patients. The National Cancer Strategy 2020-2030 aims to extend coverage of psychological care services by 2028, but does not specify either indicators or standards for psycho-oncological care. In addition, it does not mention the right to reintegrate and 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), and no legislative work in this direction is yet under way.

5.3 Costs and value for money

Costs of cancer care in Poland are lower than the EU average

Total spending on cancer care per capita in Poland in 2018 was among the lowest in the EU, at EUR 237 per capita, adjusted for purchasing power parity (PPP), which is 27 % lower than the EU average of EUR 326 (Figure 11). Direct health care costs of cancer were almost three times lower than the EU average (EUR 57 vs. EUR 154 per capita). Indirect costs of cancer were also lower: the cost of productivity loss due to cancer morbidity or premature mortality was more than 40 % lower than the EU average (EUR 68 vs. EUR 121 per capita).

Figure 11. Total spending on cancer per capita in Poland is among the lowest in the EU



Note: The EU27 average is unweighted (calculated by the OECD).
Source: Hofmarcher et al. (2020).

In Poland, hospitalisation costs constitute a vast proportion of all cancer expenditure. Only 8.3 % of spending on cancer diagnosis and treatment (PLN 6.3 billion) was dedicated to ambulatory care costs in 2012 (Więckowska et al., 2016). Chemotherapy and radiotherapy are frequently delivered during hospitalisation.

Costs of cancer prevention are relatively low in Poland (PLN 187 630 in 2016). The National Cancer Strategy 2020-2030 aims to increase this to PLN 450 million a year in 2021-2023 and to PLN 500 million a year in 2024-2030, compared to less than PLN 200 million in recent decades.

Poland aims at further expanding Drug Programmes

The number of cancer patients treated with innovative pharmaceuticals increased by 90 % between 2012 and 2018 as a result of Drug Programmes. The National Health Fund currently finances 100 active agents under the Drug programme. To introduce a new pharmaceutical product to the Drug Programme, an application to the Ministry of Health must be accepted by the Agency for Health Technology Assessment and Tariff System. The application evaluation procedure takes at least 180 days (460 days on average in 2016), according to a report by the Supreme Audit Office (NIK, 2017).

The pharmaceutical company and the Ministry of Health negotiate a separate price and risk-sharing instrument for each product. This is a lengthy procedure, which often delays the introduction of newly added treatments, and limits access to the programme to major oncologic centres with the proper administrative support. Decisions on Drug Programme implementation are not directly linked to prevalence of newly diagnosed cancers. For example, the number of drugs covered by the Programme for lung cancer is low, and only 10 % of cancer centres participate in the Drug Programme for skin cancer (Wilking et al., 2019).

Decisions on participation in the Programme are based on individual applications by each patient. The Drug Programmes available in Poland are limited due to restrictive patient inclusion criteria and strict regulation of treatment. In 2018, a relatively small number of patients (about 132 000) were enrolled in the programme.

The innovative nature of treatment and the expensive drugs involved result in substantial public costs of pharmaceutical cancer therapies. Reimbursement of cancer Drug Programme varied from 48 % to 52 % of total costs entailed by the Programme in Poland between 2015 and 2018 (Mela et al., 2020). In 2018, almost PLN 3.5 billion was spent on drug reimbursement in 92 Drug Programmes. The National Cancer Strategy 2020-2030 aims to expand the number of drugs included in the pharmaceutical cancer therapies covered by SHI. According to the Ministry of Health, the level of all fully reimbursed novel oncology therapies in Poland has increased from about 40 % to more than 60 % between 2020 and 2021. Additional instruments for drug financing in orphan indications include individual rescue access (RDTL) and the so-called Drug Fund.

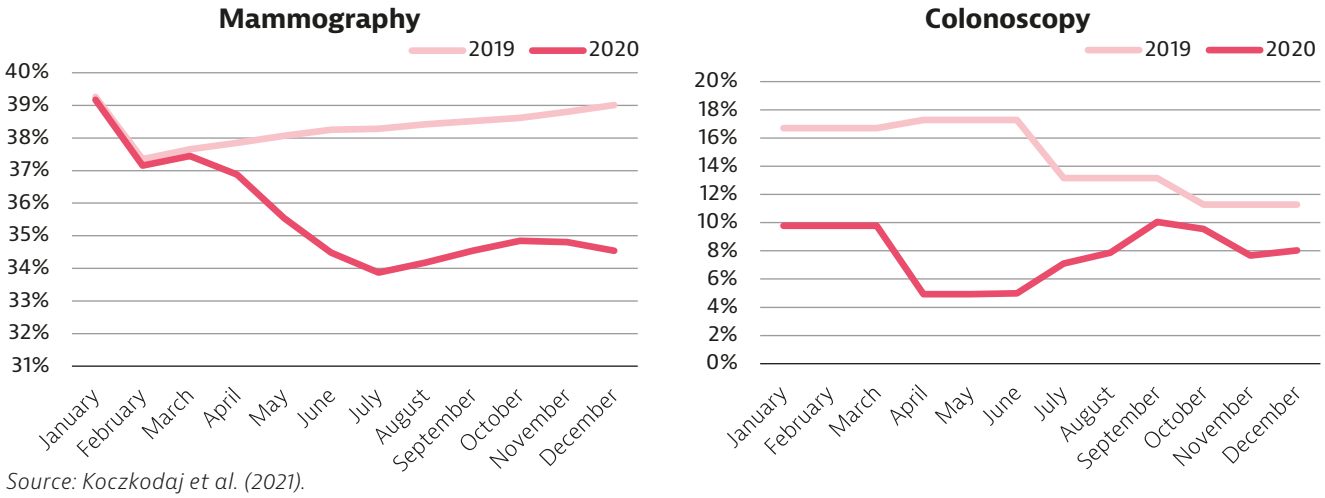
5.4 COVID-19 and cancer: building resilience

Screening activity and cancer surgery were affected during the first lockdown

COVID-19 pandemic-related lockdowns had a substantial and lasting impact on care provision, particularly in the field of cancer. Selected medical entities were transformed into specialised units dedicated solely to COVID-19 diagnosis and treatment, which limited capacity for cancer care.

As a result of the pandemic, significant reductions of planned medical procedures and cancer screening activity took place, even after the first lockdown. Multidisciplinary team meetings in oncology were reduced by 20 % in 2020 compared to 2019 (Trojanowski et al., 2022). Screening activities were suspended in April-May 2020, and had not returned to pre-pandemic levels by 2021. For example, 27 % fewer mammograms were performed in 2020 than 2019 (Figure 12). The number of colonoscopies conducted in the colorectal cancer prevention programme also dropped markedly, leading to suspension of the programme in 2021 and to its reorganisation (see Section 4).

Figure 12. Participation rates in cancer screening decreased during the COVID-19 pandemic



Source: Koczkodaj et al. (2021).

A significant increase (by 4.8 percentage points) in the proportion of breast cancer diagnosed in second stage occurred between 2019 and 2020, and an increase (by 4.3 percentage points) in the proportion of breast cancer diagnosed in the third stage was observed in 2021 (Trojanowski et al., 2022). Radiotherapy dropped by almost 6 % over the period. However, the number of cancer patients in drug programmes increased significantly during the COVID-19 pandemic.

Many hospitals postponed elective surgery and were redesignated to serve as COVID-19 centres at the beginning of the pandemic. Hospital cancer surgery dropped by 15 % on average between 2019 and 2020.

Use of digital services helped to maintain cancer care

During first year of the pandemic, 28 % of Poles reported unmet needs for medical examination or treatment. E-health services played a significant role in reducing this rate, as more than 60 % of the population used remote health services in the first year of pandemic. E-health services developed rapidly during the pandemic, taking advantage of existing tools, such as the Patient Internet Account Electronic documentation of medical records, which was introduced in 2019. E-prescriptions were introduced from January 2020. In the following year e-referrals were used in some facilities, and from July 2021 health records could be exchanged electronically between health care providers. The proportion of the population missing doses of medication because of COVID-19 disruption to primary health care was significantly lower in Poland (25 %) than the average in other countries (36 %), according to the data collected in almost 80 countries participating in the PREMISE survey, conducted by the Institute for Health Metrics and Evaluation (IHME).

6. Spotlight on inequalities

The National Cancer Programme 2020-2030 and National Oncology Network in Poland aim to improve access to high-quality cancer care – notably through standardised diagnostic and therapeutic pathways, greater care coordination and better quality monitoring. While cancer services, but not all medicines, are fully covered by SHI, private health care services are often used to supplement the public sector, especially with regard to reducing waiting times and improving access to pharmaceutical products. Many inequalities in cancer prevention, access to early diagnosis, care quality and outcomes exist in Poland.

- Cancer incidence rates are 40 % higher among men than women. Cancer mortality also varies by socioeconomic status. Higher levels of education protect from cancer mortality, particularly among men. Such disparities relate to differences in unhealthy lifestyles. The proportion of daily smokers is more than twice as high among Poles with lower than higher education levels.
- The most pronounced cancer risk factor in Poland compared to other EU countries is air pollution, which varies greatly between geographical regions. In addition, men were significantly more often exposed to chemical air pollutants than women.
- Geographical inequalities in access to cancer care are linked in part to unequal performance of screening programmes that operate at the national level for breast, colorectal and cervical cancer. The programmes date back to the mid-2000s and have not been tailored to regional needs. In particular, the screening rate for colorectal cancer was particularly low and marked with deep geographical disparities.
- Large inequalities in participation in screening programmes by education and income levels are clear. The difference in cervical screening uptake between women with higher and lower education levels is 57 percentage points.
- The unequal distribution of equipment and health personnel across geographical regions leads also to significant inequalities in access, and to provision of fragmented and uncoordinated care.

The COVID-19 pandemic had a positive impact on the process of ongoing data collection in cancer registries and timely analysis, helping to identify current challenges in equal access to cancer care. Relatively advanced adoption of e-health services in Poland during the pandemic improved medical literacy, awarness of behavioural risks and participation in preventive programmes. Plans to increase expenditure on prevention and on diagnosis and treatment of cancer in Poland are set out in the National Cancer Strategy 2020-2030.

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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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