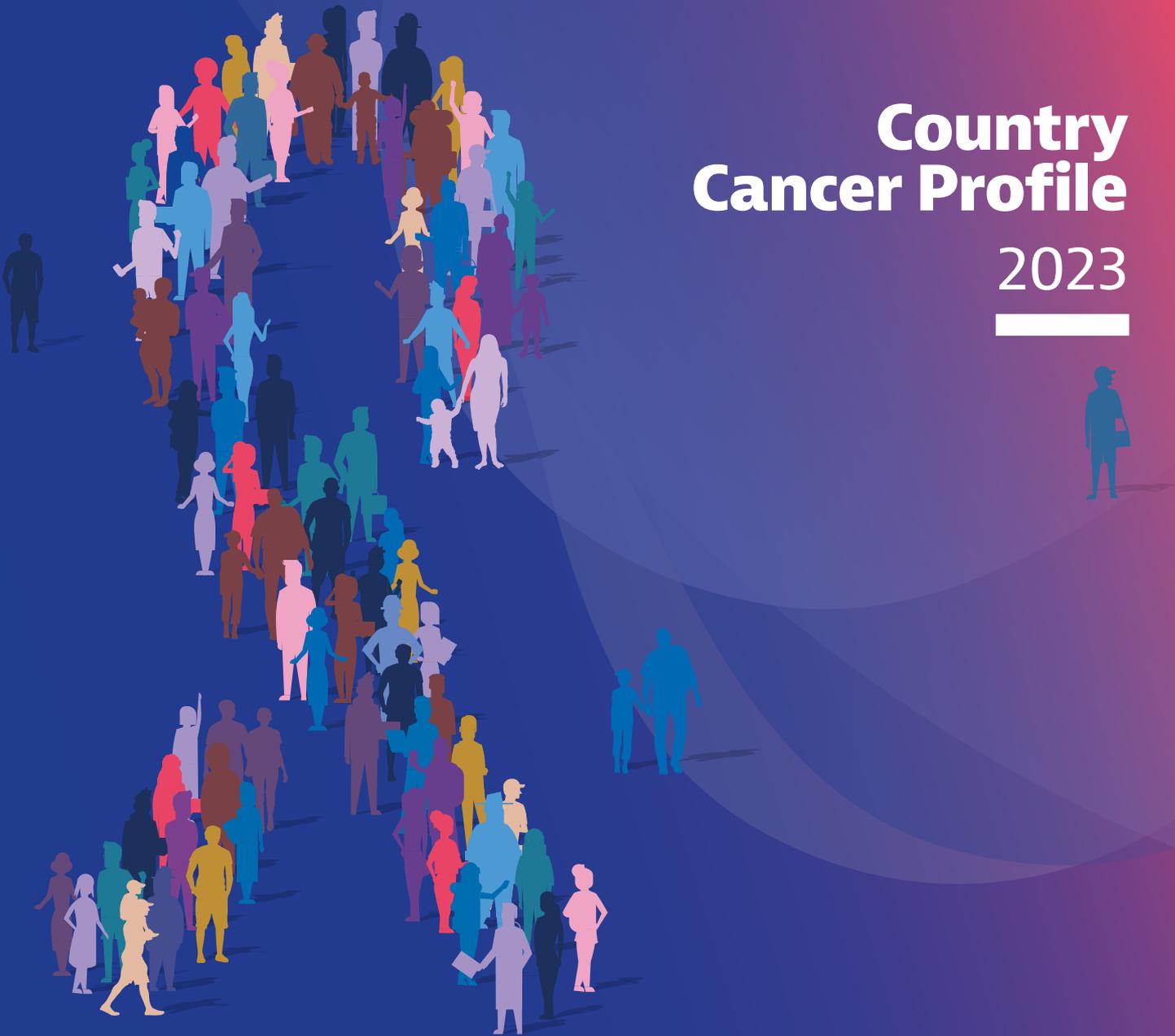




ESTONIA

Country Cancer Profile

2023



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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Summary of the main characteristics of the health system

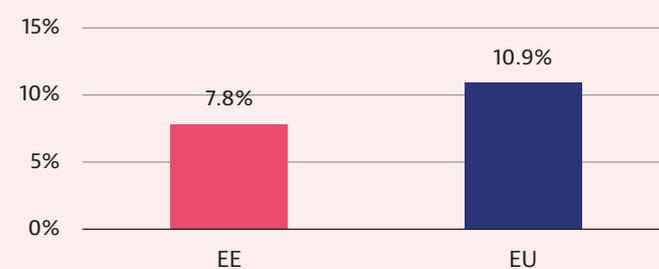
LIFE EXPECTANCY AT BIRTH (YEARS)



SHARE OF POPULATION AGED 65 AND OVER (2021)

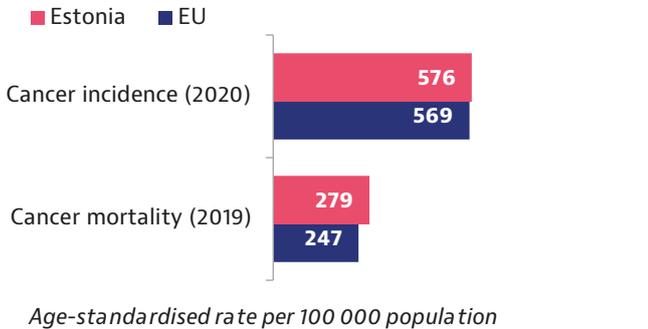


HEALTH EXPENDITURE AS A % OF GDP (2020)



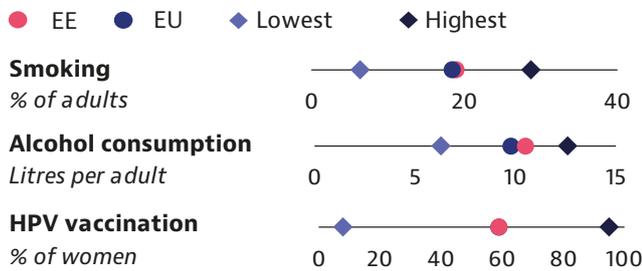
Source: Eurostat Database.

1. Highlights



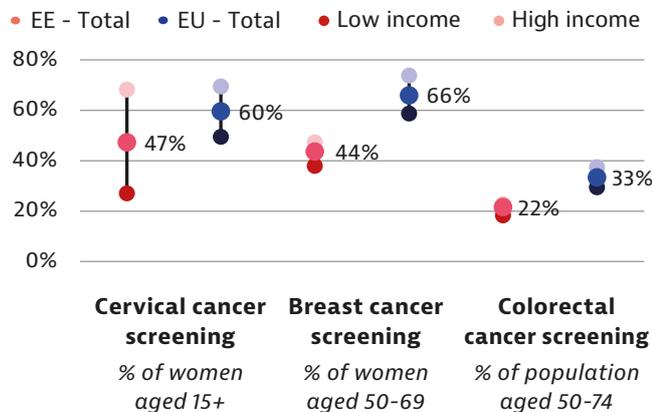
Cancer in Estonia

Overall estimated cancer incidence in Estonia is higher than the EU average, although incidence among women is lower. Cancer mortality is higher than the EU average and has decreased slowly in the last decade, especially among men. To tackle the cancer burden and improve outcomes, Estonia introduced two cancer control plans.



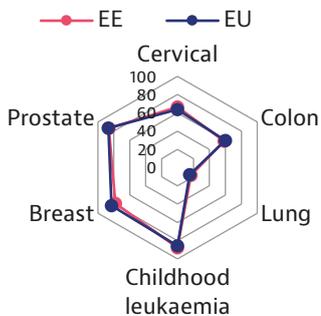
Risk factors and prevention policies

Estonia has reduced several risk factors for cancer in the last decade. Alcohol consumption and smoking have declined, but socioeconomic inequalities remain. Obesity and overweight are on the rise, especially among people with higher education levels.



Early detection

National screening programmes are available in Estonia for breast, cervical and colorectal cancer, but screening rates are below the EU average. Feasibility of new screening programmes is being assessed, and there is a commitment to improve governance and quality of data.



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



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

Cancer care performance

Financial barriers to access cancer care are low in Estonia. However, shortages of staff and equipment and long waiting times impede timely access. Delays to reimbursement decisions for novel drugs also hinder access to innovative treatment. Cancer survival rates have improved in the last decade, and further advances in quality of care are expected as a result of development of updated guidelines, concentration of care and improved monitoring of quality indicators. The cost of cancer is lower in Estonia than the EU average. Despite pricing policies, expenditure on cancer care is mainly driven by spending on cancer drugs.

2 Cancer in Estonia

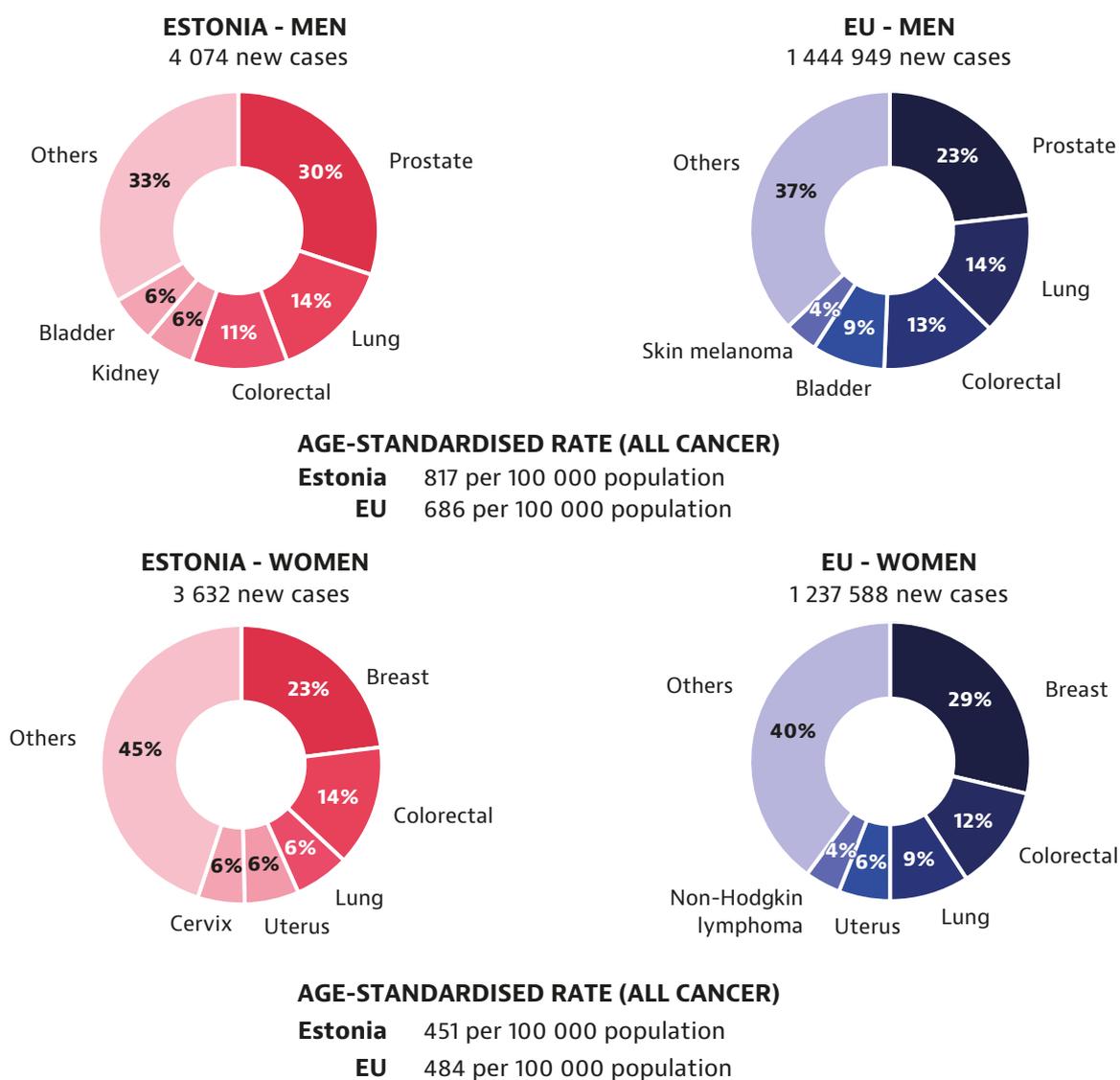
Overall cancer incidence is higher in Estonia than the EU average

According to European Cancer Information System (ECIS) of the Joint Research Centre based on incidence trends from pre-pandemic years, more than 7 700 new cancer cases were expected

in Estonia in 2020 (Figure 1). The expected age-standardised rate of cancer incidence was 576 cases per 100 000 population, which is slightly higher than the average EU rate of 569 cases per 100 000.

Figure 1. Incidence rate for all types of cancer is higher than the EU average in men, but lower than the EU average in women in 2020

Distribution of cancer incidence by sex in Estonia 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.

Differences between genders were significant: age-standardised incidence in men was expected to be almost 20 % higher than the EU average, while in women it was expected to be about 7 % lower than the EU average. The leading types of cancer in men were expected to be prostate, lung and colorectal cancer, all with higher incidence rates than the EU averages. Among women, the most common cancer types were expected to be breast, colorectal and lung cancer, with incidence below the EU average for breast and lung cancer but above the EU average for colorectal cancer.

Among less common cancers, the incidence rate of cervical cancer was expected to be 27 per 100 000 – the second highest rate among EU countries, representing an important public health issue. Age-standardised incidence of gastric (stomach) cancer among women was the highest in the EU (20 per 100 000 vs. 10 per 100 000 across the EU) and the third highest in the EU among men (42 per 100 000 vs. 22 per 100 000 across the EU). Skin melanoma was expected to constitute 3 % of new cancer cases in men and 4 % in women. For paediatric cancer, the age-standardised incidence rate in children under 15 years in 2020 was 13 per 100 000, which is lower than the EU average (15 per 100 000 population). In 2013, the estimated number of new rare cancer cases in Estonia was 1 608.

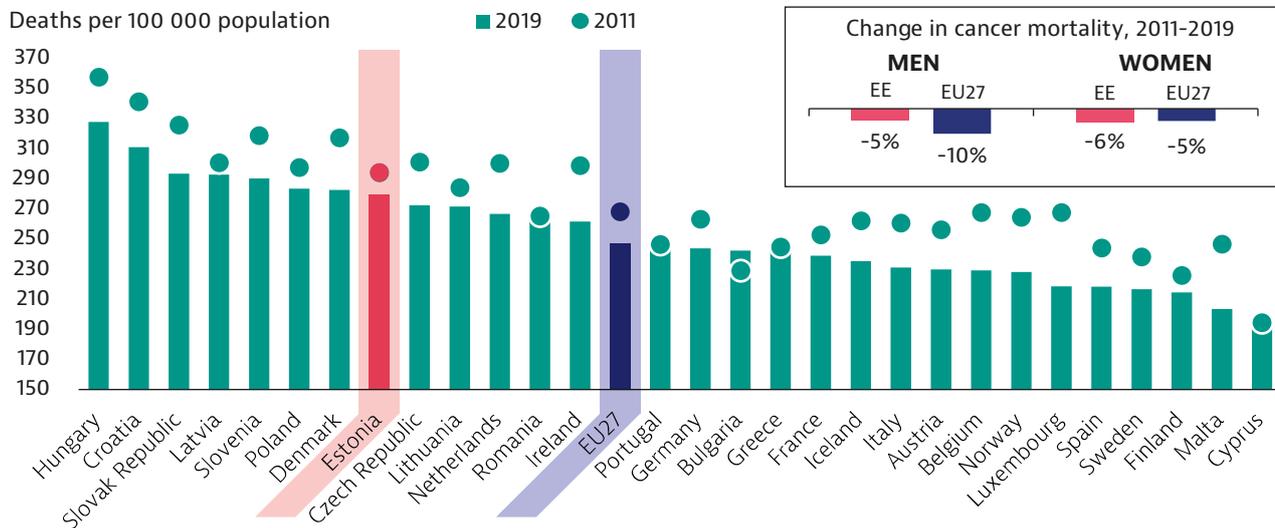
Incidence of cancer has increased in Estonia in recent decades

In the past five decades, overall cancer incidence has more than doubled in Estonia, due to an ageing population, improved diagnostic methods and the spread of behavioural risk factors (Zimmermann et al., 2021). Incidence rates of the most common cancers have increased, except for lung cancer in men, which has decreased since 1996 thanks to effective tobacco policies (see Section 3). Annual incidence of all cancers is predicted to reach 11 000 new cases by 2030 (Ministry of Social Affairs & NIHD, 2021).

Overall cancer mortality in Estonia has remained above the EU average in the last decade

The age-standardised cancer mortality in Estonia is higher than the EU average (279 vs. 247 deaths per 100 000 population). Since 2011, the mortality rate has declined at a slower pace than in other countries, widening the gap with the EU average. This was driven mostly by the small reduction in cancer mortality in men, which in 2019 was more than double the mortality rate in women (440 per 100 000 vs. 202 per 100 000) (Figure 2).

Figure 2. The decline in cancer mortality in men has been smaller in Estonia than across the EU



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

While lung cancer mortality declined by 9 % between 2011 and 2019, mortality from colorectal cancer increased by 2 % and mortality from prostate cancer increased by 10 %. However, recent evidence advises caution when interpreting prostate cancer mortality due to possible misattribution in assigning cause of death, leading

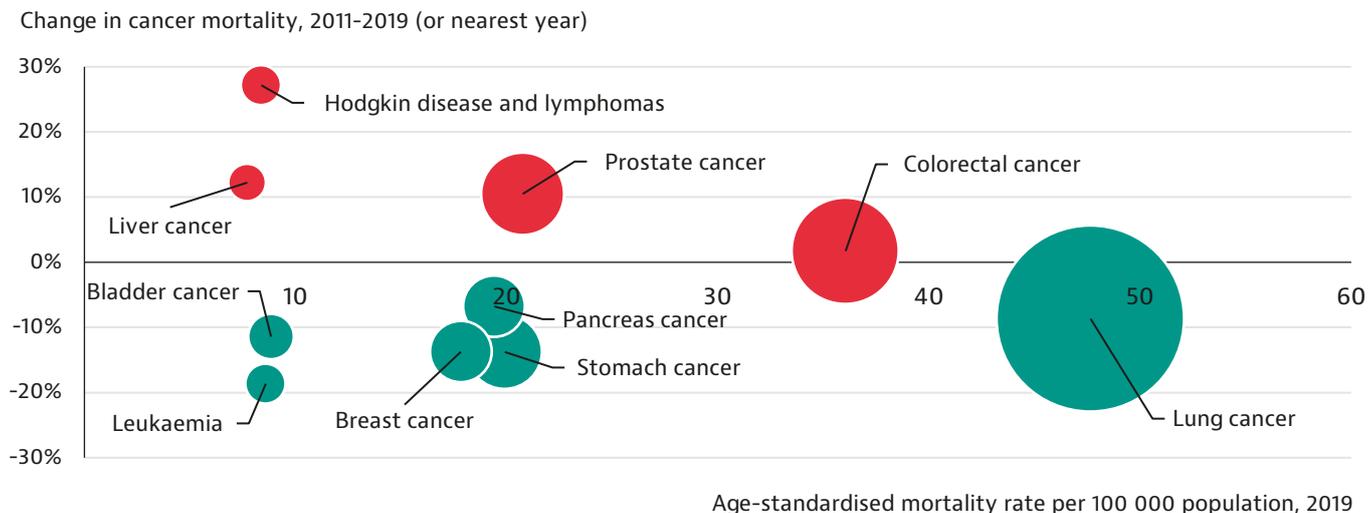
to overestimation (Innos, 2022). Breast cancer mortality declined by 14 %, making it a large proportion of the overall decline in mortality in women (Figure 3).

Overall, between 2000 and 2019, potential years of life lost due to malignant neoplasms saw a relative

decrease of 38 %, and accounted for 1 365 years of life lost among 100 000 people up to 75 years. The relative decrease was slightly larger among men

(40 %) than women (35 %), and accounted for 1 635 and 1 178 years of life lost in 2019, respectively.

Figure 3. Lung and breast cancer mortality declined between 2011 and 2019 in Estonia



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.

The Cancer Control Plan 2021-2030 was developed with the input of a wide range of stakeholders

Since 2007, Estonia has introduced two cancer control plans. The National Cancer Strategy 2007-2015 achieved important goals, including a marked reduction in incidence of lung cancer in men and improvements in overall cancer survival. However, several targets remained unmet, especially those on cervical cancer incidence. Furthermore, the Strategy should have been integrated into the National Health Plan from 2013, but only selected prevention and screening activities were included, highlighting gaps in strategic planning for cancer prevention, treatment and care activities.

To address these issues, the Cancer Control Plan 2021-2030 was published in 2021 (Ministry of Social Affairs & NIHD, 2021). This identifies nine priorities related to cancer prevention, early diagnosis, access to high-quality treatment for all and ensuring high-quality care and follow-up for cancer patients (Box 1). These priorities align with those set out in the Europe's Beating Cancer Plan (European Commission, 2021). The Cancer Control Plan 2021-2030 will be complemented by an implementation plan, which will define responsibilities and timelines to reach the goals. The Plan is to be implemented within the framework of the National Health Plan 2020-2030, which includes reducing health inequalities based on gender, geographical location and education among its main goals (Ministry of Social Affairs, 2019).

Box 1. A range of stakeholders were involved in development of the Cancer Control Plan 2021-2030

In the light of the need to define new priorities for cancer prevention, diagnosis and treatment, the National Institute for Health Development (NIHD) consulted a wide range of stakeholders – including health professionals, patient representatives, researchers, health care providers, the Estonian

Health Insurance Fund (EHIF) and the Ministry of Social Affairs – to set goals and develop a set of concrete actions necessary to achieve them. In December 2020, the draft Plan was circulated for public consultation to collect additional feedback. It was published in April 2021.

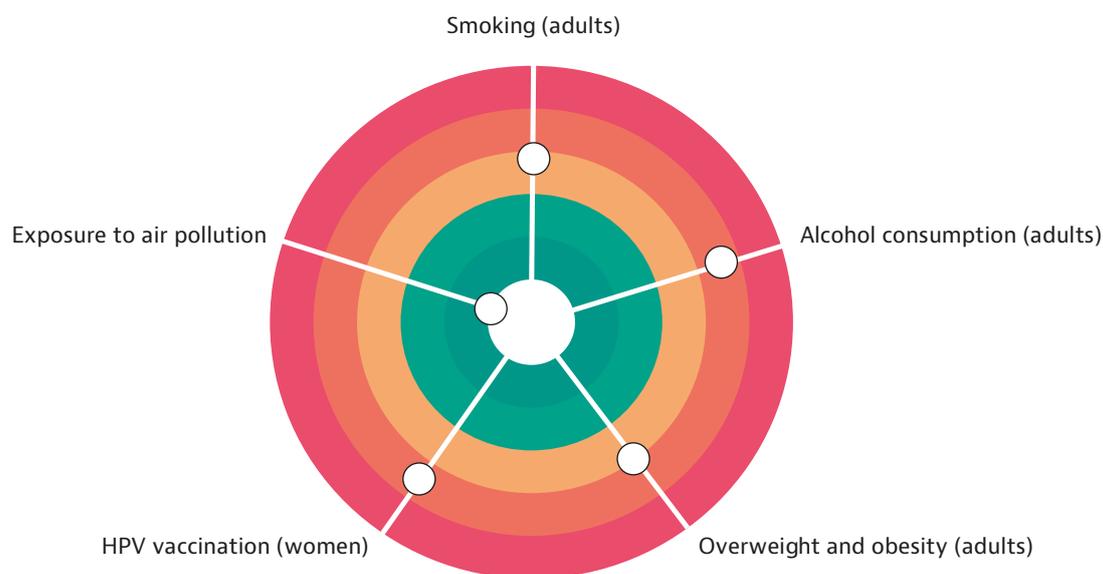
3. Risk factors and prevention policies

Estonia has invested in prevention to reduce risk factors for cancer

Given the high proportion of preventable cancers attributable to modifiable risk factors, increasing attention has recently been given to prevention of behavioural risk factors and promotion of healthy lifestyles in Estonia. Since 2014, the share of total

health care expenditure dedicated to prevention has grown from 2.9 %, reaching 4.8 % in 2020 – higher than the EU average of 3.4 %. Although progress has been made, Estonia can achieve further improvements in alcohol consumption, smoking and overweight (Figure 4).

Figure 4. Alcohol consumption is an important risk factor for cancer in Estonia



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.

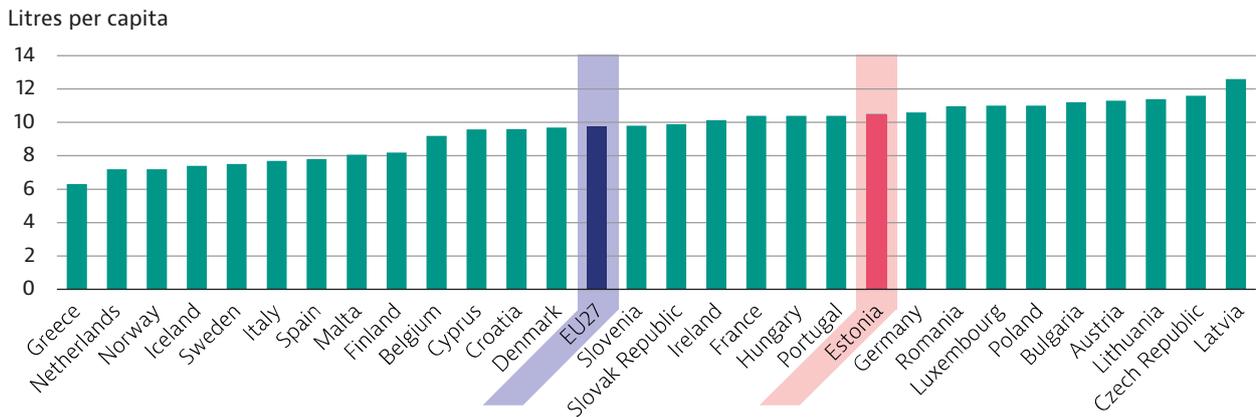
Sources: OECD calculations based on the European Health Interview Survey (EHIS) 2019 for smoking and overweight/obesity rates, OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health (GISAH) for alcohol consumption (2020), WHO for human papillomavirus (HPV) vaccination (through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

Overall alcohol consumption has declined in recent years thanks to a range of policy actions

Alcohol consumption in Estonia reached its peak in 2007, when mean total alcohol consumption among people aged 15 years and over was almost 15 litres of pure alcohol per capita per year. A gradual decrease to 10.5 litres per capita in 2020 (Figure 5) was achieved thanks to several national policies. In 2014, the government adopted the Green Paper on Alcohol Policy, leading to implementation of measures such as several increases in excise taxes, restrictions on sales and advertising and enhanced counselling services, followed by health promotion initiatives to reduce harmful alcohol drinking (Habicht et al., 2018). Public awareness campaigns were set up as part of the ‘More sober and healthier

Estonia’ Programme, funded by the European Social Fund – such as the campaign promoting an alcohol-free month to increase awareness of alcohol-related health risks and development of targeted services in primary and specialist care to address problematic consumption patterns. Nonetheless, the NIHD reported that in 2021, 21.3 % of men and 10.4 % of women consumed alcohol at hazardous levels (defined as 140 g/week in men and 70 g/week in women). Educational disparities persist, as hazardous consumption patterns were reported by 21.3 % of people with lower (25.6 % of men and 16.6 % of women) and 11.4% of people with higher education levels (18.6 % of men and 7.9 % of women).

Figure 5. Alcohol consumption in Estonia is above the EU average



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

Tobacco control policies have led to a decline in smoking rates

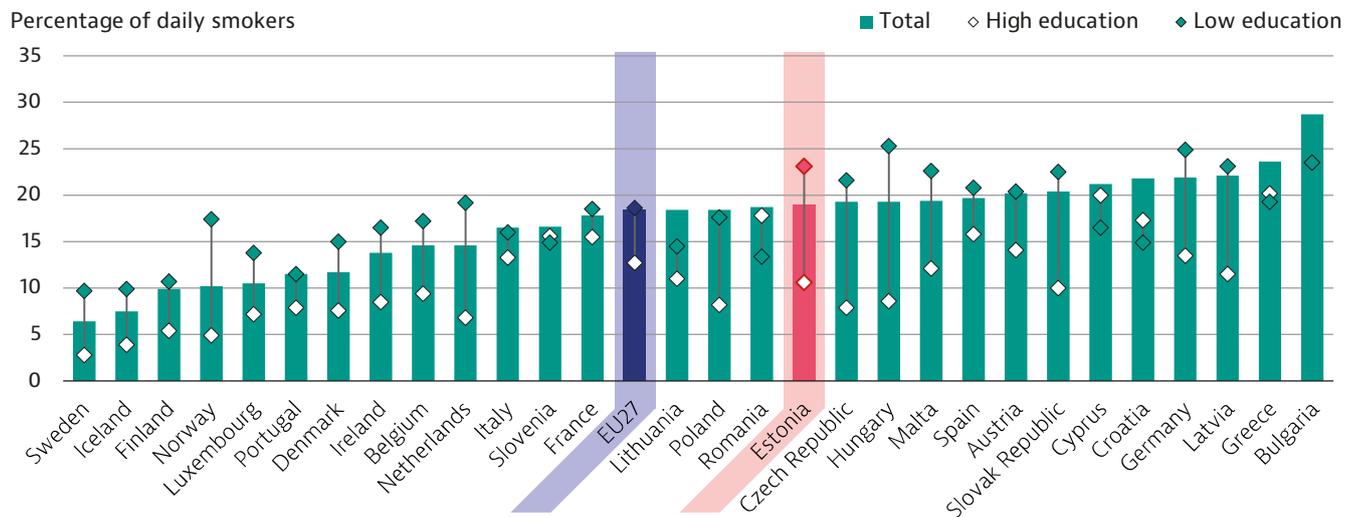
Estonia strengthened its tobacco control policies in the last decade: the Tobacco Act of 2005 was amended several times, and in 2014 the Green Paper on Tobacco Policy was approved. These developments led to implementation of measures to reduce consumption, including increases in excise taxes, restrictions on advertising and sales, measures on pictorial warnings, bans on retail display of tobacco products and sales of flavoured tobacco products, and limitations on cross-border sales (Government Office, 2020; Habicht et al., 2018).

Following these measures, prevalence of cigarette smoking declined; in 2019, approximately 18.9 % of the Estonian population smoked cigarettes daily – down from 22.7 % in 2014. The decline was larger among men (from 31.8 % to 25.2 %), which brought the rate closer to the EU average for men (22.3 %). However, prevalence among men was

still more than 11 percentage points higher than among women (13.5%). Although the situation has improved since 2014, socioeconomic inequalities persist. Smoking was more prevalent in the lowest (20.6 %) than the highest (13.2 %) income quintile, and smoking rates among people with lower education levels were the fourth highest in the EU, at 23.1 % among people with lower vs. 10.6 % among people with higher education levels (Figure 6). Regional variations also exist: the NIHD reported that in 2020 prevalence of daily smoking was highest in rural areas (21.8 %) compared to the capital Tallinn (14.1 %) and other towns (17.8 %) (NIHD, 2021).

The National Health Plan 2020-2030 and the Cancer Control Plan 2021-2030 continue to tackle smoking by improving availability of smoking cessation counselling and restricting tobacco products – particularly to minors with the involvement of families, schools and communities.

Figure 6. Wide educational inequalities persist in smoking habits in Estonia



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

Increased attention has been paid to promoting physical activity and healthier dietary habits

According to 2019 survey data, 56.7 % of the Estonian population reported being overweight or obese – higher than the 52.7 % EU average. The proportion was 4.4 percentage points higher than in 2014 due to increases among people with higher education levels in both sexes. The gap with the EU average was wider among people with higher education levels and elderly people. Women with higher education levels were less likely to report being overweight or obese (49.3 %) than women with lower levels of education (58.4 %). The opposite gradient emerged for men, where overweight and obesity were reported more frequently by men with higher (66.0 %) than lower education levels (49.8 %).

Physical activity habits and diet contribute to high obesity and overweight prevalence. In Estonia, 25.8 % of the population reported at least 150 minutes of health-enhancing aerobic physical activity per week in 2019 – less than the 32.7 % EU average. Daily consumption of fruit was more prevalent among people with higher (54.4 %) than lower (43.2 %) education levels, as was daily consumption of vegetables with an even wider gap (54.2 % among people with higher vs. 36.5 % among those with lower education levels).

To address unhealthy behaviours, Estonia put in place national dietary and physical activity guidelines, as well as an obesity strategy targeting both children and adults, and mandatory nutrition standards for schools (OECD, 2019). The Green Paper on Nutrition and Physical Activity was also developed, with recommendations to promote food reformulation, improve food labelling, collaborate with the food industry to promote

healthy choices and regulate marketing, while also promoting nutrition and exercise counselling by health professionals. Since 2018, employers are incentivised to cover employee expenses for sports and certain health promotion services, and in 2019 a support programme for regional sports centres was established to ensure availability of facilities to undertake physical activity (Government Office, 2020).

Exposure to air pollution is lower in Estonia than in the EU

In 2019, exposure to PM₁₀¹ in Estonia was 10.8 µg/m³, the second lowest across EU countries and significantly lower than the EU average (20.5 µg/m³). Estonia also had the lowest concentration of PM_{2.5} among EU countries (4.8 µg/m³ vs. 12.6 µg/m³ EU average). According to the Institute for Health Metrics and Evaluation, ozone and PM_{2.5} exposure accounted for an estimated 1 % of all deaths in Estonia in 2019, a rate among the lowest across the EU.

Human papillomavirus vaccination coverage in Estonia improved in 2020

To address rising incidence of cervical cancer, an HPV vaccination programme for girls was introduced in 2018. The free voluntary school-based HPV vaccination was included in the national immunisation schedule for girls aged 12-14 years in 2018. In 2019, vaccination coverage was still below EU average (59 %), reaching 48 % of 15-year-old girls, but during the pandemic in 2020, coverage increased significantly to 59 %, in line with the EU average. The Cancer Control Plan 2021-2030 aims to improve HPV vaccination uptake in girls, and to extend coverage to boys in the near future.

4. Early detection

Estonia has cancer screening programmes for breast, cervical and colorectal cancer

Breast, cervical and colorectal cancer screening programmes are available nationally. The breast cancer screening programme, established in 2004, invites women aged 50-69 years to a free mammogram every two years at a provider contracted by the EHIF. The cervical cancer

screening programme, established in 2006, targets women aged 30-65 years, who are seen every five years by a gynaecologist or a midwife contracted by the EHIF (see Section 5.4). The free primary screening test was changed from a papsmear to an HPV test in 2021. For colorectal cancer, an increase in incidence – particularly diagnosed in advanced stages – led to implementation of a

¹ Particulate matter (PM) is classified according to size: PM₁₀ refers to particles less than 10 micrometres in diameter; PM_{2.5} to particles less than 2.5 micrometres in diameter.

population-based screening programme (screening offered to a specific at-risk target population) in 2016, consisting of a free faecal immunochemical test every two years for men and women aged 60-69 years. The programme is delivered by family doctors and nurses, who act as intermediaries for distribution of sampling tools; participants send their samples to the laboratories by mail.

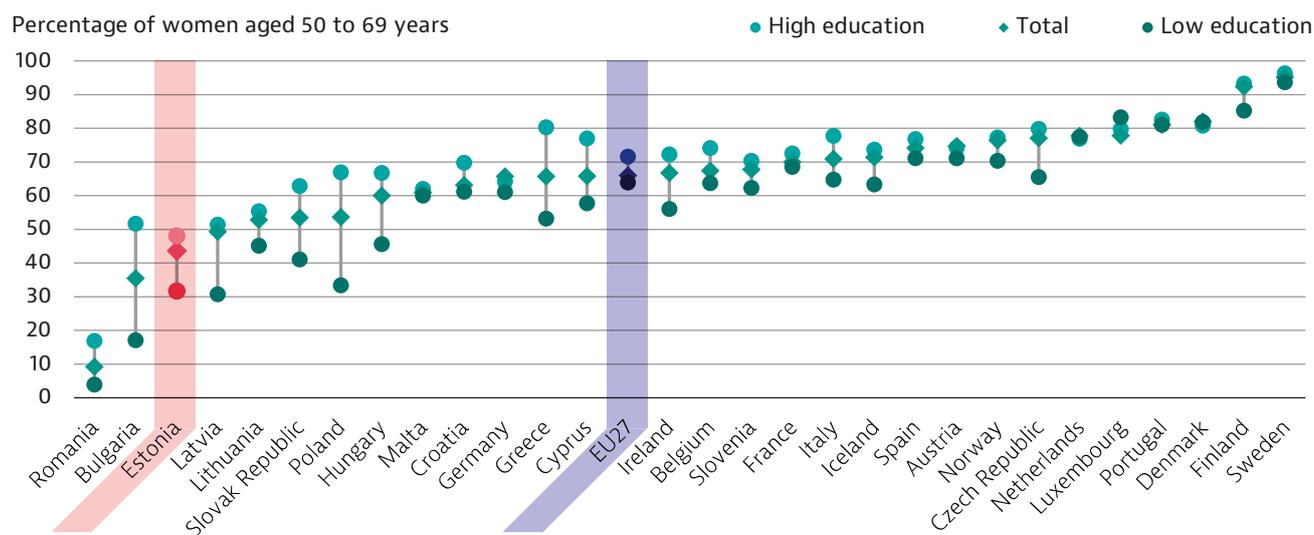
The Cancer Screening Registry, developed by the NIHD in 2015, sends notifications to eligible residents. The Registry includes contact information for residents and is linked to the Electronic Health Record (EHR), a portal available to residents that stores health records, prescriptions and a history of health services received. Eligible people are notified about cancer screening by direct mail, email and through their EHR. When people in the target population consult family doctors or receive prescribed medicine, health professionals including pharmacists receive an automated notification advising them to remind the patient about screening. Although uninsured people had to cover the cost of cancer screening themselves

until 2021, the EHIF now covers it (see Section 5.1) (OECD/European Observatory on Health Systems and Policies, 2021).

Breast cancer screening rates in Estonia are among the lowest in the EU

Breast cancer screening rates have grown in recent years but are still among the lowest in the EU: only 43.6 % of women aged 50 to 69 years reported having undergone screening in the previous two years in 2019 (Figure 7). Income and education inequalities are high: screening rates were 48.1 % among women with higher vs. 31.7 % among women with lower education levels. Geographical disparities exceeded 15 percentage points in 2019, with the highest rates in rural areas and the lowest rates in the most urbanised counties (NIHD, 2022). According to a study by the Tallinn Health Care College and the EHIF, several factors explain these differences, including health care utilisation habits, availability of time and personal beliefs or fear (Lubi, 2021).

Figure 7. Breast cancer screening rates in Estonia are among the lowest in the EU



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.

Cervical cancer screening rates are affected by inequalities

Cervical cancer screening rates are low in Estonia: in 2019, the share of women aged 15 years and over who reported undergoing screening (47.2 %) was lower than the EU average (59.5 %). Screening rates vary widely, from 27.0 % among women in the lowest income quantile to 68.1 % among those in the highest. The rate was lowest (20.3 %) among women with lower education levels – down from

28.8 % in 2014. The screening rate was 58.2 % among women with higher education levels – up from 57.5 % in 2014. The NIHD also reported geographical disparities, with a gap of more than 10 percentage points between the counties with the highest and lowest screening rates in 2019 (NIHD, 2022).

A study carried out by the EHIF pointed out that a key determinant in screening uptake was the amount of previous interaction with the health system, suggesting a need to inform healthy individuals of the benefits of cervical cancer screening (Niglas, 2021). Estonia introduced several measures during the pandemic to facilitate access to screening and reduce disparities in access (see Section 5.4).

A colorectal cancer screening programme was launched in 2016, but screening rates are still low

Screening is only available to people aged 60-69 years in Estonia, rather than the EU Council recommendation of 50-74 years. In 2019, 21.5 % of the population aged 50 to 74 years reported undergoing colorectal cancer screening – below the EU average (33.3 %). While the education gradient was small, screening rates were almost 5 percentage points higher among people with higher (22.7 %) than lower (18.2 %) income levels – a smaller gap than the EU average. The gap between counties was large, reaching 20 percentage points, and geographical disparities were wider among men than women (NIHD, 2022).

Outcome and quality indicators are needed to assess the effectiveness of cancer screening programmes

The Cancer Screening Registry collects, analyses and publishes data on process indicators such as screening coverage, invitation coverage and participation rates, but outcome indicators are often incomplete or of low quality. Capacity to link information between registries is limited, and integration of expertise is needed to analyse the

effectiveness of existing screening programmes to improve coverage and outcomes. To address these issues, the Cancer Control Plan 2021-2030 aims to improve data collection and to launch a new governance structure for screening, comprising a governing council and site-specific working groups in charge of analysing quality indicators. The Plan also aims to expand the dataset by including patient information related to risk factors and family predisposition, to facilitate development of personalised risk scores for better identification of the target population. Studies exploring the applicability of a polygenic risk score to breast cancer screening are under way.

Estonia is exploring the possibility of introducing new cancer screening programmes

Because of high morbidity and mortality from lung and prostate cancer (see Section 2), Estonia is assessing the feasibility of introducing targeted screening programmes. For lung cancer, a recent study concluded that family doctors and nurses could be involved in identification of long-term smokers for screening via low-dose computed tomography (CT) (Laisaar, 2022). Based on this finding, a pilot study was set up in 2022 to assess the resources needed for national rollout of systematic lung cancer screening. Feasibility of introducing prostate cancer screening, by including prostate-specific antigen levels and multiple other risk factors in referral decisions for magnetic resonance imaging (MRI) screening, is also being assessed. Health technology assessments (HTAs) providing evidence of effectiveness and cost-effectiveness are required before introduction of new cancer screening programmes.

5. Cancer care performance

5.1 Accessibility

Financial barriers to access cancer care are low in Estonia

Estonia's social insurance is usually tied to employment or dependent on student, retirement or unemployment status. It covers 95 % of the population, including pregnant women and children under 18. The rest of the population

– mainly unregistered unemployed people or those in unstable employment – are nevertheless included in screening programmes and gain insurance coverage if diagnosed with cancer. Although cost-sharing rules apply without income-based exemptions, out-of-pocket payments (OOPs) are kept low. Copayments for specialist visits via family doctor referral are EUR 5, while those for inpatient care (including administration of medicines) are EUR 2.5 per day up to 10 days,

after which no copayment applies. Children aged up to 18 years and intensive care patients are exempt from inpatient care fees (Võrk & Habicht, 2018).

Copayment arrangements for pharmaceuticals were reformed in 2018. For self-administered pharmaceuticals for treatment or alleviation of chronic diseases, patients pay a fixed copayment of EUR 2.5 and a copayment proportional to the price of the drug, which is reduced for pensioners, people with disabilities and children. However, for drugs to treat severe, life-threatening or pain-inducing diseases such as cancer, patients only pay the fixed copayment of EUR 2.5. Additional reimbursements are also available for an annual cumulative OOP payment above EUR 100. Evidence shows that the 2018 reform increased the number of people receiving such reimbursements, which had a positive impact on access to medicine and improving financial protection (OECD/European Observatory on Health Systems and Policies, 2021; OECD, 2020).

Shortages of staff and equipment hinder accessibility to adequate diagnosis and treatment

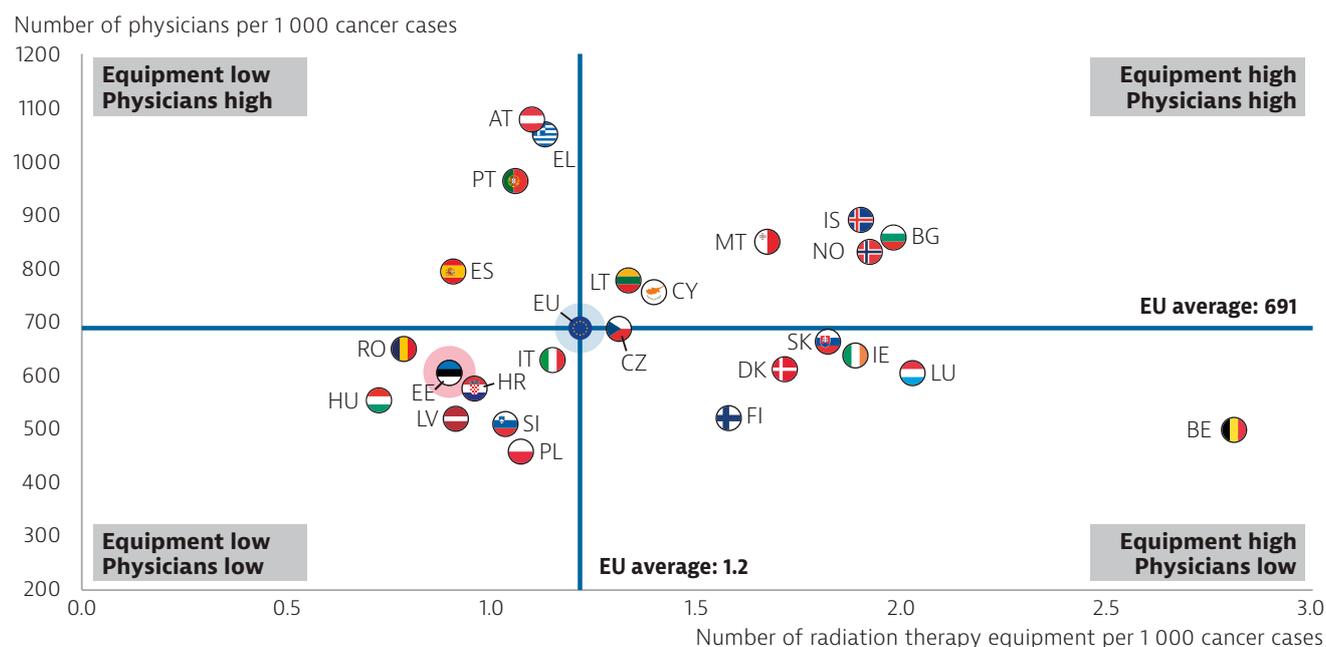
Estonia plans to improve availability of professionals and of diagnostic and therapeutic equipment to ensure access to cancer diagnosis and treatment. Although the quantity of diagnostic equipment such as CT scanners and MRI units has increased since 2005, it is still low compared

to most EU countries, and density of physicians and radiation therapy equipment is also lower than the EU average (Figure 8). Availability of other professionals, such as dosimetrists, radiation therapists and radiation nurses, is also among the lowest in the EU (Peiró Pérez et al., 2017). To address shortages, the Cancer Control Plan 2021-2030 aims to increase residency positions for doctors, enhance training of other health professionals and increase the quantity of radiation equipment.

The Cancer Control Plan 2021-2030 aims to standardise and improve monitoring of waiting times

Waiting times in cancer care are perceived as an issue in Estonia, despite existing targets. While waiting times for an oncologist appointment have decreased in the last decade, in 2018, 34 % of patients waited longer than the guaranteed maximum of six weeks set by the EHIF. According to clinical audits, waiting times for radiotherapy also tend to be long, often exceeding four weeks from consultation to the beginning of treatment. Ensuring timeliness of diagnosis and treatment is a priority of the Cancer Control Plan 2021-2030, which aims to ensure that the time from diagnosis to initiation of treatment does not exceed 63 days. A key goal is to improve systematic data collection and reporting on waiting times at the hospital level to identify bottlenecks and address them.

Figure 8. Density of physicians and radiation therapy equipment is lower than in most EU countries



Note: The EU average is unweighted (calculated by the OECD). Radiation therapy equipment from hospitals and providers of ambulatory care. Data refer to medical doctors (excluding nursing and caring professionals).

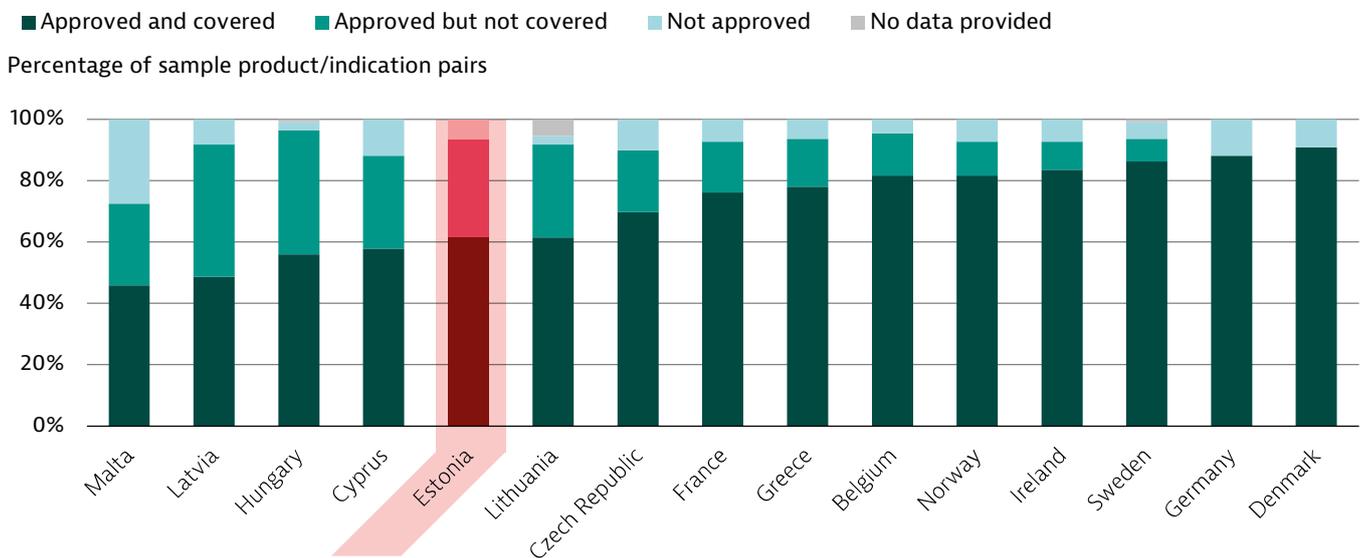
Source: Eurostat and OECD Health Database (data refer to 2020 or nearest year).

Availability of new cancer medicines is a challenge in Estonia

The number of drugs approved and covered is lower in Estonia than in many EU countries because of long coverage decision times (Figure 9). Of 109 products and indication pairs investigated,

approximately 95 % were approved, yet more than 30 % were not covered in Estonia. The average time between marketing approval and application for coverage, and the time between application for and granting of coverage, are longer than in most EU countries.

Figure 9. Long coverage decision times limit availability of cancer drugs in Estonia



Source: Chapman, Paris and Lopert (2020).

Moreover, the number of clinical drug trials in Estonia is decreasing, and the number of patients involved in trials is below the EU average (Ministry of Social Affairs & NIHD, 2021). To improve access, the Gift of Life charitable foundation responds to individual requests for reimbursement of the cost of drugs that are not covered by the EHIF, and reimbursed more than 180 cancer patients in 2021. To improve access to new cancer drugs, the Cancer Control Plan 2021-2030 aims to speed up and simplify procedures for coverage and to improve patient involvement in clinical drug trials by supporting national cancer research and involvement in European research projects.

Fragmentation in palliative care delivery prevents access to existing services

Although the number of palliative care services was higher in Estonia than the EU average in 2019 (1.4 services per 100 000 population vs. 1.1 per 100 000), access is an issue. Several actors provide palliative care, including hospitals, professional associations and patient associations, and 48 providers offered home-based nursing services in 2020. Despite availability, however, timely access is hindered by factors such as lack of awareness among health care professionals, absence of a palliative care network to coordinate services and shortfalls in funding. National guidelines on palliative care were issued in 2020 to improve awareness among

patients and professionals at all levels of care, and to standardise access to and quality of palliative care. The Cancer Control Plan 2021-2030 aims to improve access to palliative care by training health professionals, promoting awareness among patients and staff, and ensuring adequate funding. The Plan also aims to improve access to psychological and social support throughout the patient journey – from primary care to specialised care and life after cancer.

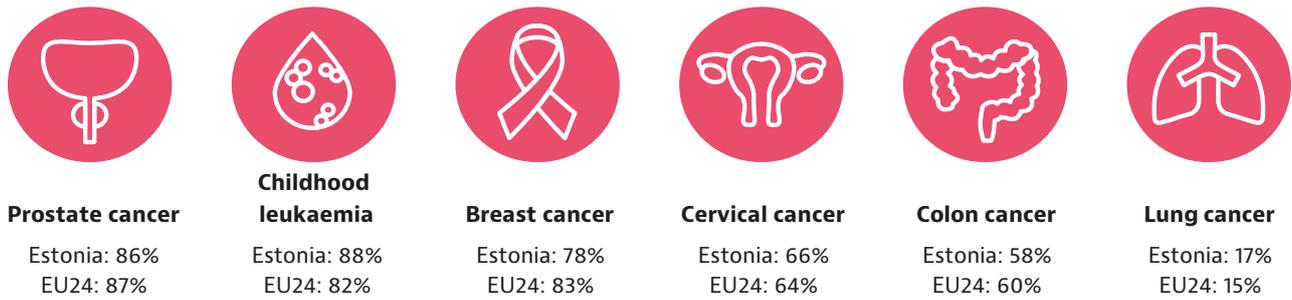
5.2 Quality

Quality of cancer care has improved in Estonia in recent years

Five-year net survival rates for the most common cancers in Estonia improved between 2004 and 2014. Survival rates for childhood leukaemia, cervical cancer and lung cancer were above the EU averages for patients diagnosed in 2010-2014 (Figure 10). Prostate cancer survival rates increased by 18 percentage points in the same period (from 68 % to 86 %), closing the gap with the EU average.

The increase in survival rates for childhood leukaemia was the highest in the EU, rising from 64 % among children diagnosed in 2000-2004 to 88 % among those diagnosed in 2010-2014, thanks to high-quality care provided at specialised centres (Box 2).

Figure 10. The five-year net survival rate for childhood leukaemia, cervical cancer and lung cancer in Estonia is higher than EU average



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.

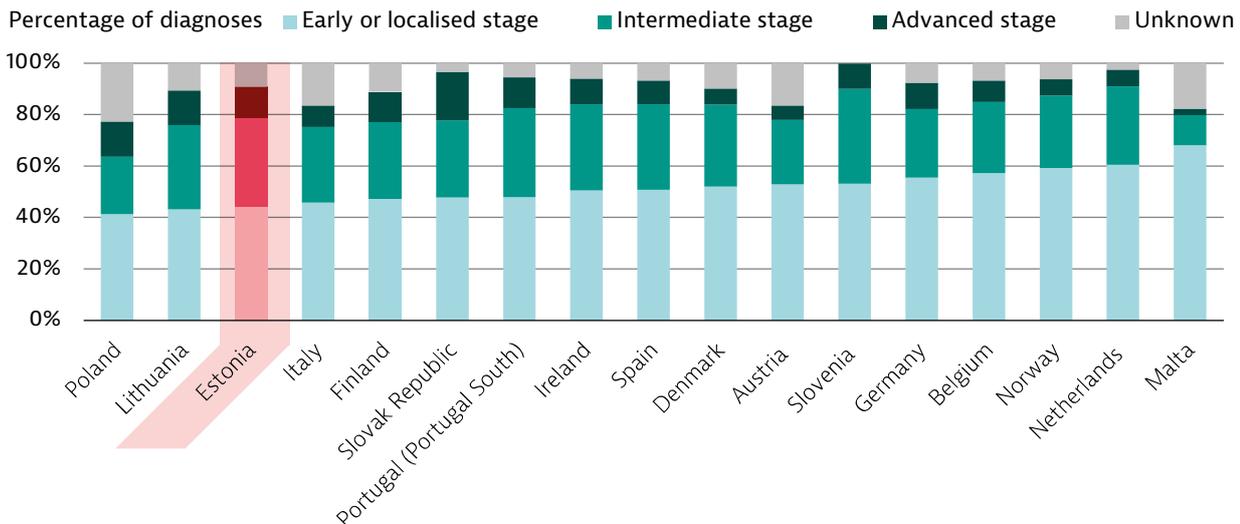
Box 2. Cancer care for children is delivered in dedicated hospitals in Estonia

Two children’s haematology-oncology centres are dedicated to diagnosing and treating paediatric cancers. Doctors can rely on international collaboration when skills or equipment are lacking – as in the case of proton therapy, which plays an important role in paediatric cancer but is not currently delivered in Estonia. The Cancer Control Plan 2021-2030 aims to enhance availability of services, improve co-operation with international competence centres and improve access to clinical trials for paediatric cancer patients. It also aims to ensure that adequate support services are available for children and their families during and after treatment, with special attention and regular monitoring for those with syndromes containing a strong component of genetic predisposition.

Breast and colon cancer survival rates also improved, but remain below the EU averages. Early diagnosis is a key determinant of survival, but cancers are diagnosed at a more advanced stage in Estonia because of low screening rates and delayed access to diagnosis: only 44.3 % of women with breast cancer were diagnosed at an early or

localised stage in 2010-2014 – much lower than the EU average of 51.6 % (Figure 11). Moreover, while survival rates are comparable to the EU average for early-stage breast cancer, the rates for intermediate- and advanced-stage breast cancer are lower than the EU averages.

Figure 11. Breast cancer is less likely to be diagnosed at an early stage than in other EU countries



Note: Data for Germany, Spain, Portugal, Italy, and Poland represents less than 100 % of the national population. Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.

Systematic use of clinical guidelines needs to be promoted to improve care quality

Estonia plans to improve cancer care quality by enhancing adherence to guidelines and developing further clinical guidance. Guidelines for treatment of many cancers are available, but no systematic monitoring of adherence to guidelines takes place. The Cancer Control Plan 2021-2030 aims to ensure systematic use of uniform diagnostic, treatment, follow-up and palliative care guidelines across health care providers at all levels, to ensure that cancer care is standardised and timely, and that high-quality care is provided in areas such as molecular diagnosis, haematological cancer treatment and management of patients with genetic tumour predisposition syndromes. Estonia tries to reflect patient voices in developing standards of care by following an innovative process, established in 2011 in collaboration with EHIF, the University of Tartu and WHO, which recommends systematic involvement of patient representatives in the advisory board and panel involved in guideline development (Habicht et al., 2018).

Estonia seeks to concentrate cancer care and foster coordination across all levels of care

Estonia is committed to centralising cancer care to improve quality. Cancer care is mainly delivered in two comprehensive cancer centres – regional hospitals located in the north and the south of the country – which provide the three main modalities of care (surgery, systemic treatment and radiotherapy). An additional cancer centre delivers surgery and systemic therapy. Smaller hospitals also provide systemic therapy via trained nurses and physicians under the oversight of cancer centres to improve access to care. Two centres are dedicated to paediatric cancers (see Box 3). Nonetheless, cancer surgery is still being carried out in smaller hospitals that may lack the required competence and experience. The Cancer Control Plan 2021-2030 therefore aims to improve centralisation of cancer surgery following needs assessment. To ensure timeliness and cost-efficiency, the plan is to concentrate haematological diagnostic procedures requiring specific equipment and expertise, with the aim that 95 % of patients with a haematological cancer are diagnosed in a cancer centre.

Access to cancer care in the community has been improved by leveraging Estonia's e-health infrastructure. To facilitate referral and increase the efficiency of the diagnosis pathway, e-consultations with oncologists have been available for family doctors since 2013 in cases of

suspected cancer. An online support tool to assist with management and reporting of side-effects is in a trial phase with the participation of cancer patients, the cancer care team and family doctors. Gaps in information exchange and coordination between all providers involved in the delivery of cancer care have been identified, so the Cancer Control Plan 2021-2030 also aims to improve care coordination and continuity throughout patient pathway. Teamwork between primary care and specialised cancer centres is to be strengthened through seminars and training.

Monitoring of cancer care quality is strong in Estonia

The Estonian Cancer Registry facilitates monitoring of key indicators such as cancer incidence, mortality and stage at diagnosis, and is linked with the Cancer Screening Registry. Established in 1978, the Registry includes historical data since 1968 and continuously collects information from clinicians and pathology and haematology laboratories (see Section 4). In line with recommendations from the European Network of Cancer Registries, the Estonian Cancer Registry will be expanded with more detailed collection of information on cancer stage, treatment and pathohistological characteristics, as well as information specific to each type of cancer, to facilitate analysis of quality of diagnostics and treatment (Ministry of Social Affairs & NIHD, 2021). Data on socioeconomic status is not routinely collected, but can be linked for research purposes via identification codes assigned to each person, allowing inequalities in cancer care to be monitored.

Further advancements in cancer care monitoring were achieved in 2014, when the Advisory Board for the Development of Quality Indicators was established under the EHIF's supervision. This regularly publishes indicators on access to and quality of diagnosis and care for breast, colorectal, prostate and cervical cancer by hospital. The reports are publicly available on the EHIF website and facilitate inter-hospital comparison, promoting quality improvement among providers.

Hospitals are required to have internal quality management systems, including patient evaluations. Pilot projects are being developed in some hospitals to include patient-reported outcome and experience measures of quality to ensure delivery of people-centred care, and will be introduced in all institutions dealing with cancer care according to the Cancer Control Plan 2021-2030.

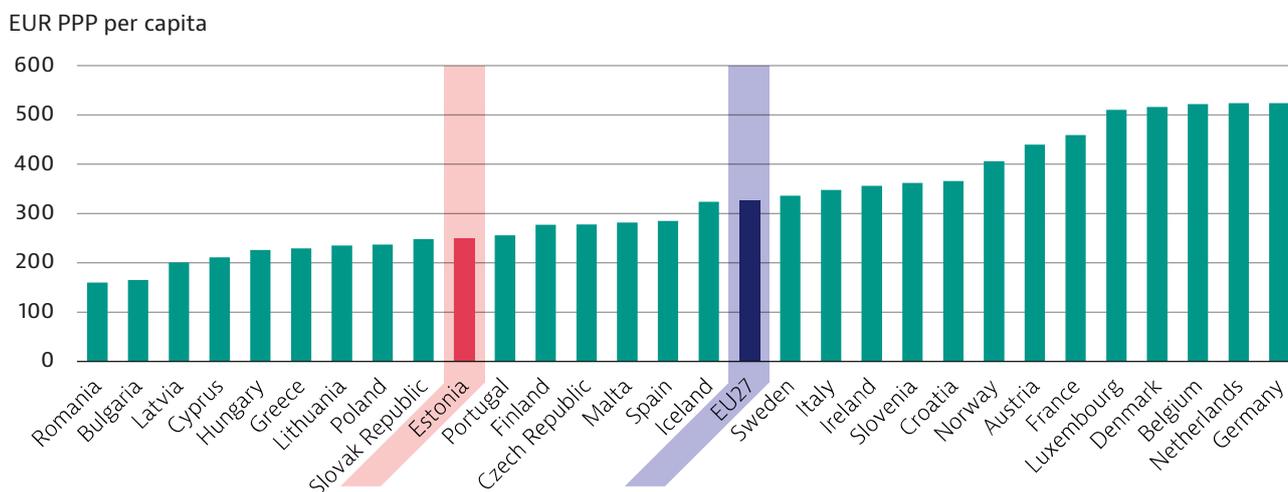
5.3 Costs and value for money

The cost of cancer in Estonia is lower than in most European countries, but indirect costs are high

In 2018, per capita costs of cancer in Estonia after adjusting for purchasing power parity (PPP) were

EUR 250, which is lower than the EU average of EUR 326 (Figure 12).

Figure 12. Estonia bears lower costs associated with cancer than the EU average



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

Direct per capita health care costs of cancer in Estonia were less than half the EU average (EUR 73 vs. EUR 154), but indirect costs of cancer were high. The cost of productivity loss due to cancer morbidity, which includes lost earnings due to sickness absence and permanent incapacity or disability of employed people, was higher than the EU average (EUR 57 vs. EUR 42). To support cancer patients returning to work, the Cancer Control Plan 2021-2030 addresses issues with availability of rehabilitation services, including occupational rehabilitation (see Box 3).

Box 3. Estonia aims to expand psychological support and rehabilitation after cancer

Use of rehabilitation services and psychological support for oncological patients is limited in Estonia because of a lack of awareness among health care professionals about available options and fragmentation of services. Support for oncological patients returning to work is not systematic, and occupational health and labour market assessments are not performed. The Cancer Control Plan 2021-2030 aims to address these issues by ensuring that rehabilitation and support are included in treatment plans for cancer patients (aiming for 90 % of patients by 2025) and by strengthening support for a return to work after cancer. The aim is that by 2028, 80 % of cancer patients who have completed treatment will be participating in the labour market.

In Estonia, measures are in place to ensure value for money in expenditure on cancer drugs

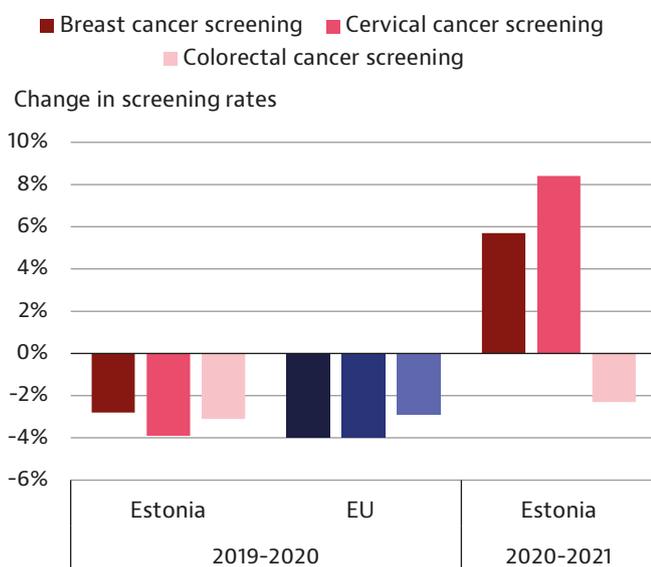
According to the EHIF's financial report, funding dedicated to cancer care in 2020 was 16 % of the total budget for specialised health care, and had increased by 4 % compared to the previous year – mainly driven by increased spending on cancer drugs. To ensure value for money in drug expenditure, requests for coverage submitted by manufacturers require HTAs, which are evaluated by the State Agency for Medicines and the EHIF. Once approved, the pricing mechanism for cancer drugs relies on external reference pricing and negotiation between the manufacturer and the EHIF. To reduce spending on ineffective treatment, managed entry agreements and risk sharing agreements are in place, according to which pharmaceutical companies must bear the cost of a pharmaceutical if it does not achieve the desired impact (OECD, 2020).

5.4 COVID-19 and cancer: building resilience

Breast cancer screening rates were affected by the pandemic but have recovered in 2021

Cancer screening services were suspended for two months during the initial wave of the COVID-19 pandemic. Thereafter, participation rates started to recover slowly, but screening rates remained low overall in 2020 (Figure 13). According to an EHIF assessment of the impact of the pandemic on health care services, between March and July 2020 more than 7 000 fewer women attended breast cancer screening than in the same period of 2019. Coverage of the target population in 2020 (52.2 %) was lower than in 2019 (55.0 %). The largest declines were observed in southern Estonia in the largely rural counties of Valga (- 11 %) and Võru (- 9.2 %) (NIHD, 2022). In 2021, a third mobile unit for mammography was added, and uptake recovered and exceeded pre-pandemic levels in most counties. However, wide disparities still exist in breast screening uptake by geographical location, ranging from 54.3 % in Ida-Viru County in north-eastern Estonia to 70.4 % in Saare County in western Estonia.

Figure 13. After falls in 2020, uptake of breast cancer and cervical cancer screening rose in 2021



Sources: NIHD Health Statistics and Health Research Database. OECD Health Statistics 2022.

After a setback in 2020, cervical screening uptake increased above pre-pandemic levels

Participation rates in the cervical cancer screening programme were also affected by the pandemic, decreasing from 46.1 % in 2019 to 42.2 % in

2020 among the target population, with wide geographical differences (Fujisawa, 2022; NIHD, 2022). In 2021, cervical cancer screening rates improved compared to pre-pandemic levels in all counties except Lääne-Viru and Ida-Viru in north-eastern Estonia. Several measures were introduced in 2021 to improve accessibility, such as relaxing requirements for providers to obtain contracts with the EHIF for reimbursement, and including trained family doctors in addition to gynaecologists and midwives in screening delivery. Home-based HPV self-sampling was trialled for women in the target group who had not participated in the national programme by August 2021. In 2022, self-sampling was made available for all women in the target group who had not participated in screening by August 2022.

On the other hand, colorectal cancer screening coverage among people aged 60-69 years did not recover in 2021. Overall participation rates fell from 52.9 % in 2019 to 49.8 % in 2020 and 47.5 % in 2021, probably due to the effects of COVID-19 on the workload of family doctors, who play an important role in colorectal cancer screening, as well as patient hesitancy to seek health care during the pandemic. The decline was uneven among counties, with uptake increasing by 4.5 % in Jõgeva but decreasing by 15.5 % in Hiiu. By 2021, participation rates remained uneven, ranging from 38.2 % in Valga in southern Estonia to 61.5 % in Jõgeva in eastern Estonia (NIHD, 2022).

Inpatient and outpatient cancer care provision in 2020 was lower than in 2019

At the hospital level, although elective care was postponed for most specialties, cancer care continued to be provided without structural changes to procedures in health care provision (WHO Regional Office for Europe, European Commission, European Observatory on Health Systems and Policies, 2021). Nonetheless, hospital discharges for cancer declined by almost 8 % in 2020, although this was less than the EU average of 12 %. Cancer surgery volumes also decreased: the number of total mastectomies performed in 2020 was more than 18 % lower than in 2019 – significantly more than the average decrease of 6 % in the EU – while partial mammary gland excisions decreased by 9 % – less than the EU average (11 %).

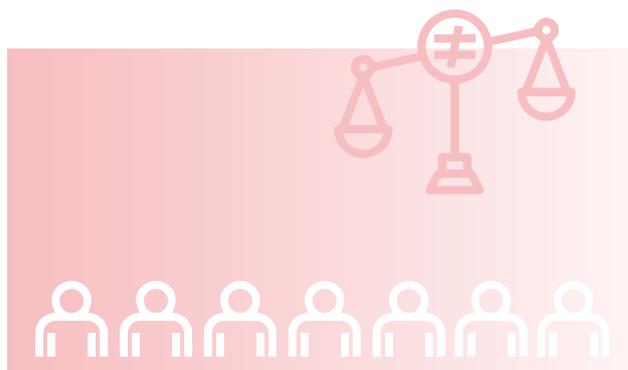
6. Spotlight on inequalities

The Estonian health care system provides access to free screening programmes and coverage for cancer care to the entire population, although copayments apply. There are marked inequalities in cancer prevention, access to early diagnosis, care quality and outcomes.

- The gender gap in cancer incidence is higher in Estonia than the EU average: the incidence is higher among men than among women. Cancer mortality is also higher among men and has declined less in the last decade than among women.
- Socioeconomic inequalities are marked in the distribution of behavioural risk factors for cancer. In 2019 smoking was more than 7 percentage points more prevalent in the lowest income quintile than the highest, and more than 10 percentage points higher in rural areas than in Tallinn and other towns. Educational disparities persist, as hazardous alcohol consumption patterns were reported by 21.3 % of people with lower and 11.4 % of people with higher education levels.
- Among men, overweight and obesity are more common among those with higher (66 %) than lower (49.8 %) education levels, whereas the opposite is observed among women (49.3 % with higher vs. 58.4 % with lower education levels). Healthy dietary habits seem to be more common among people with higher education levels, with differences up to 17 percentage points (54.4 % vs. 43.2 % for fruit consumption and 54.2 % vs. 36.5 % for vegetable consumption). Low physical activity was consistent across educational and income groups.

- Although screening programmes are provided free of charge for the whole population, income and education inequalities and differences between regions exist in screening rates. The education gap in breast cancer screening was 16 percentage points, and reached about 40 points in cervical cancer screening. Regional differences were highest in colorectal cancer screening rates, reaching 20 percentage points.
- The COVID-19 pandemic has caused disruptions in all areas of cancer care. Screening uptake rates were particularly affected, and variations across counties were wide.

Policies have been implemented to improve access to cancer screening programmes, including inclusion of uninsured people in cancer screening programmes, use of mobile units for breast cancer screening to reach remote areas, and the introduction of human papillomavirus self-sampling to improve cervical cancer screening uptake. Moreover, planned improvements in coordination among all levels of care, reductions of waiting times and faster coverage decision times for oncology drugs are policies aiming to improve equitable access to high-quality 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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