



LUXEMBOURG

# Country Cancer Profile

2025

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## The Country Cancer Profile Series

The European Cancer Inequalities Registry is a flagship initiative of 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, regions and population groups. 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 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 Thematic Working 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 and information also come from the European Commission's Joint Research Centre (EC-JRC), the EU statistics on income and living conditions (EU-SILC) Survey, the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the International Atomic Energy Agency (IAEA), the European Society for Paediatric Oncology (SIOPE), the European Union Agency for Fundamental Rights (FRA LGBTIQ), the Health Behaviour in School-aged Children (HBSC) survey as well as from the 2023 Country Health and Cancer Profiles, 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. Mortality and incidence rates are age-standardised to the European standard population adopted by Eurostat in 2013.

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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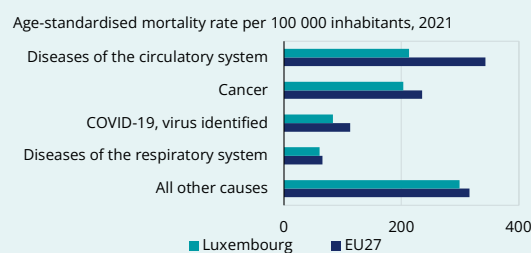
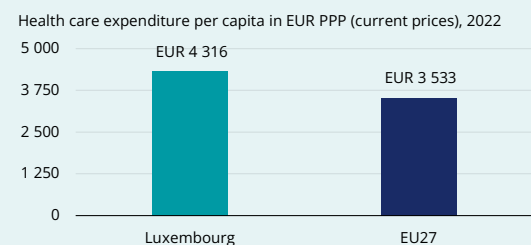
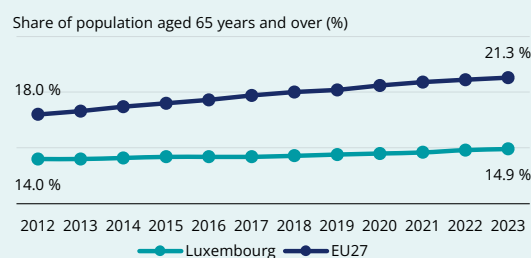
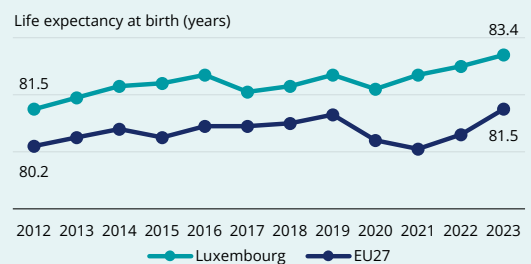
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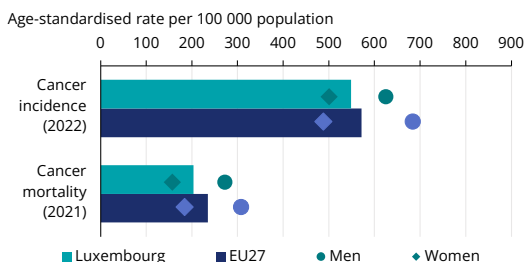
## Key health system and demographic statistics



Source: Eurostat Database.

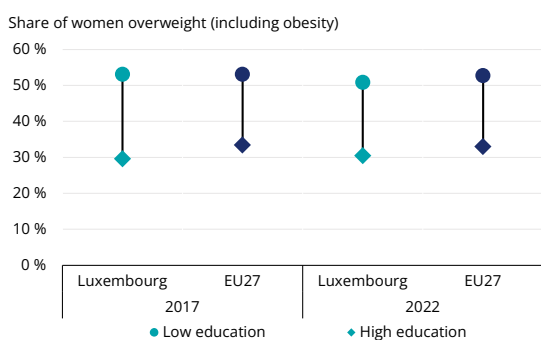
# 1. Highlights

## Cancer in Luxembourg



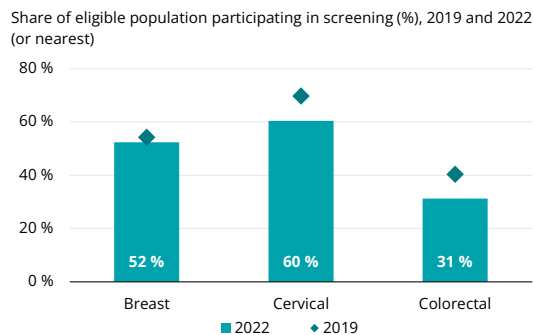
Estimated cancer incidence in Luxembourg is below the EU average in 2022. Cancer mortality rates are lower in Luxembourg than the EU, but are higher among men (272 per 100 000) than women (157 per 100 000). Luxembourg's lower incidence and mortality are attributed to concerted efforts through the country's National Cancer Plan, which emphasises better prevention, co-ordination of care and development of cancer monitoring and research.

## Risk factors and prevention policies



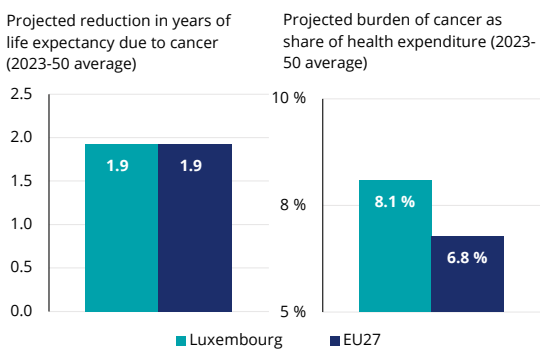
Luxembourg outperforms other EU countries in maintaining low rates of overweight and obesity, occupational exposure to cancer risk factors, and air pollution. However, daily smoking rates have risen to almost one in five adults in recent years, and the average alcohol consumption is 11 litres among people aged 15 and over, higher than the EU average of 10 litres. Prevalence of overweight (including obesity) was 77% higher among women with lower compared to higher education levels in 2022. Luxembourg implements communication strategies each year to increase HPV vaccination coverage, targeting healthcare professionals and the general population, to increase awareness and uptake.

## Early detection



Luxembourg has implemented two population-based screening programmes for breast and colorectal cancer, while cervical cancer screening is conducted on an opportunistic basis at the discretion of individuals and their doctors. Participation rates in breast, colorectal and cervical cancer screening declined slightly over time. Following the introduction of the national colorectal cancer screening programme in 2021, participation rates increased by 4 percentage points in 2022. In 2024, Luxembourg has expanded the target age range for both breast and colorectal screening to 45-74, and is increasing the availability of free screening sample tests for colorectal cancer in pharmacies.

## Cancer care performance



In Luxembourg, access to cancer services is facilitated through low out-of-pocket expenses for patients thanks to substantial public health financing. While Luxembourg has the highest density of nurses per 1 000 cancer cases in the EU, availability of the medical workforce is a challenge. Measures initiated to address this include establishment of postgraduate specialty medical training programmes in oncology and increasing training places for doctors by 2030. Luxembourg has made great progress in improving the quality of care, including implementation of cancer diagnosis and treatment waiting times, development of multidisciplinary boards and standardised patient pathways. Over 2023-50, the projected burden of cancer on health expenditure is expected to exceed the EU average.

# 2. Cancer in Luxembourg

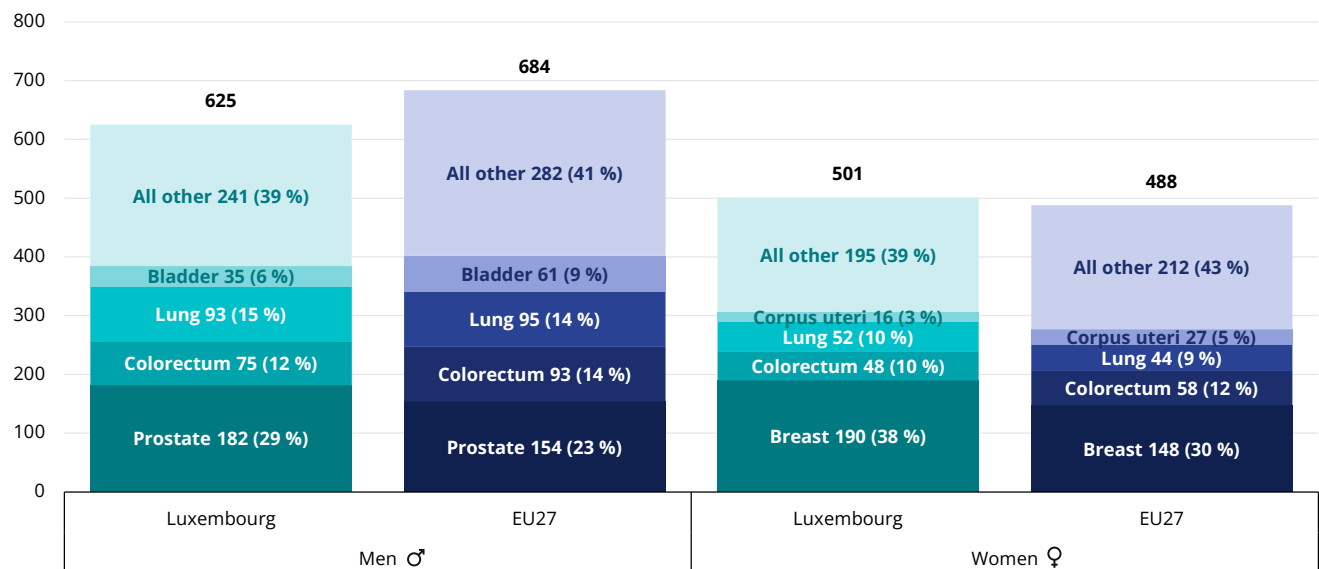
## Estimated cancer incidence in Luxembourg is lower among men than the EU average

According to the European Cancer Information System (ECIS) of the Joint Research Centre, based on incidence trends from pre-pandemic years, approximately 2 980 new cancer cases were expected in Luxembourg in 2022. Estimated cancer incidence was 549 cases per 100 000 population,

which was lower than the EU average of 572 per 100 000. Age-standardised incidence among men in Luxembourg was 625 cases per 100 000 men – 9% lower than the EU average of 684 per 100 000. Conversely, the incidence rate among women in Luxembourg was 501 cases per 100 000 women, exceeding the EU average of 488 per 100 000 by 3% (Figure 1).

**Figure 1. Cancer incidence rates are lower among men than the EU average**

Age-standardised incidence rate per 100 000 population, estimates, 2022



Notes: 2022 figures are estimates based on incidence trends from previous years, and may differ from observed rates in more recent years. Includes all cancer sites except non-melanoma skin cancer. Corpus uteri does not include cancer of the cervix. Source: European Cancer Information System (ECIS). From <https://ecis.jrc.ec.europa.eu>, accessed on 10 March 2024. © European Union, 2024. The incidence percentage breakdown was re-computed based on age-standardised incidence rates and as such differs from the percentage breakdown of absolute numbers shown on the ECIS website.

Incidence of different cancer types follows similar patterns for both men and women in Luxembourg and across the EU. Prostate cancer is the most common cancer among men, accounting for 29% of incidence in Luxembourg – exceeding the EU average of 23%. This is followed by lung cancer<sup>1</sup> at 15%, then colorectum cancer (12%), bladder cancer (6%) and melanoma (6%). For women, breast cancer is the most common, at 38% of all cancers – surpassing the EU average of 30%. Other common cancer sites among women in Luxembourg include lung (10%), colorectum (10%) and corpus uteri (3%). Melanoma and thyroid cancer follow.

Looking forward, ECIS estimates that cancer cases will increase by 57% between 2022 and 2040 in Luxembourg.

## Luxembourg has significantly decreased cancer mortality

With an age-standardised mortality rate of 203 per 100 000 population, Luxembourg has the second lowest cancer mortality rate within the EU, 14% below the EU average of 235 per 100 000 (Figure 2). Reflecting a common trend across the EU, Luxembourg’s cancer mortality rates are substantially higher among men (272 per 100 000) than women (157 per 100 000). In 2021, lung cancer was the leading cause of cancer mortality in 2021,

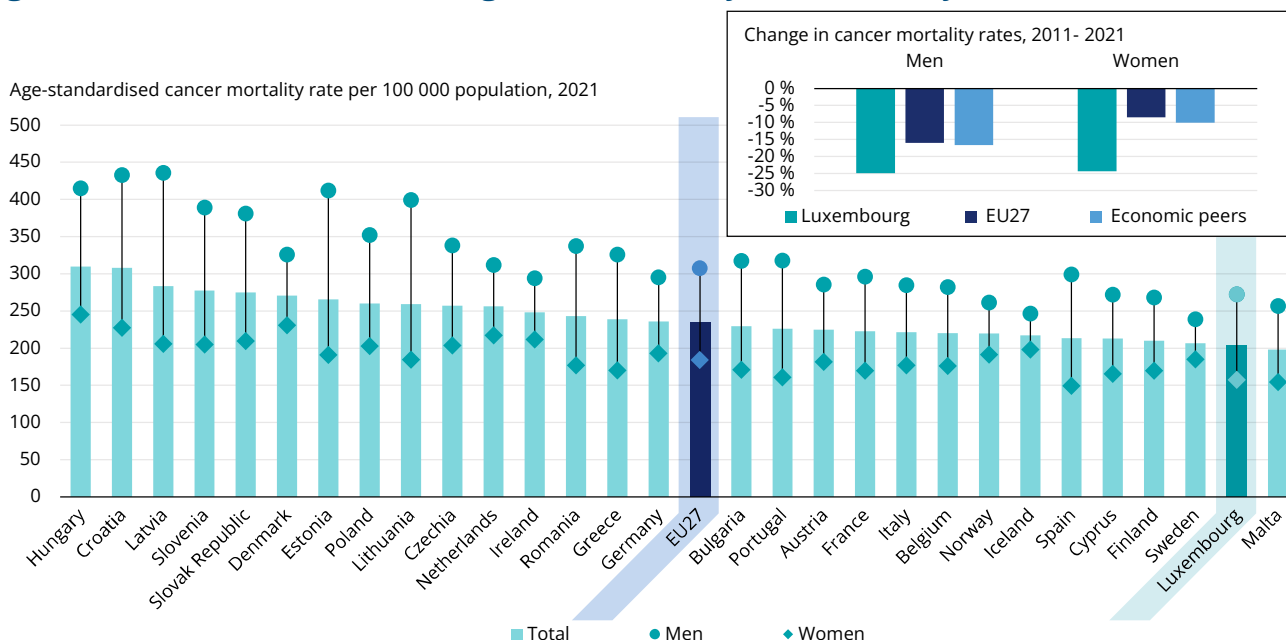
<sup>1</sup> Lung cancer also refers to trachea and bronchus cancers.

accounting for 20% of cancer deaths, followed by colorectal (11%), breast (9%) and prostate cancers (7%).

From 2011 to 2021, Luxembourg experienced a reduction in cancer mortality rates, with a greater decline than the averages across the EU and among its economic peers<sup>2</sup> (Figure 2). Among men,

the mortality rate fell by 25%, which was greater than the average reductions of 16% across the EU and 17% among Luxembourg's economic peers. Similarly, the mortality rate among women fell by 24% – considerably greater than the average reductions across the EU (8%) and Luxembourg's economic peers (10%).

**Figure 2. From 2011 to 2021 Luxembourg's cancer mortality rate declined by 25%**



Notes: Economic peers are defined as tercile clusters based on 2022 GDP per capita in purchasing power standard terms. Economic peers for LU are AT, BE, DE, DK, IE, IS, NL, NO and SE. Source: Eurostat Database.

**Luxembourg is making strides towards lowering avoidable mortality for breast, colorectal and lung cancer**

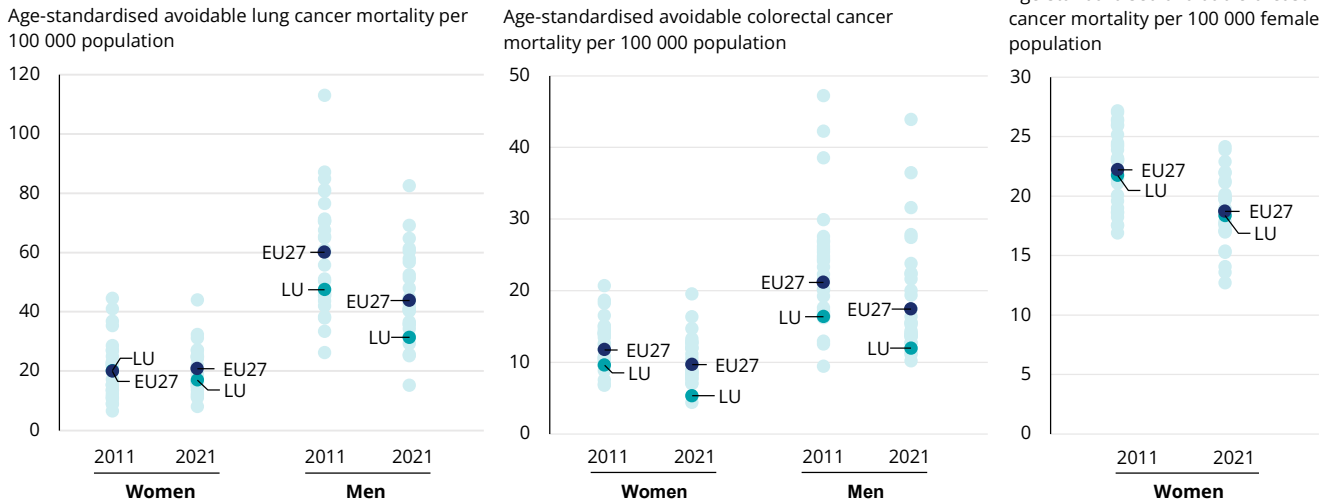
Thanks to improved prevention strategies and advances in treatment options, a significant proportion of cancer deaths among people aged under 75 are considered potentially avoidable.<sup>3</sup> In 2021, Luxembourg reported lower rates of avoidable mortality for several cancers compared to the EU averages (Figure 3). Luxembourg had notably reduced preventable mortality from lung cancer, with rates of 17 per 100 000 women (lower than the EU average of 21 per 100 000), and 31 per 100 000 men (lower than the EU average of 44 per 100 000). From 2011 to 2021, preventable lung cancer mortality in Luxembourg declined by 16% among women and 34% among men. This contrasts with the EU trends, where the average preventable mortality rate among women increased by 4%, while it decreased by 27% among men. The treatable mortality rate from breast cancer

was 18 per 100 000 women in 2021, which was slightly below the EU average (19 per 100 000). This reflected a 15% decrease since 2011, comparable to the EU average reduction of 16% over the same period. The treatable mortality rate from colorectal cancer also decreased – by 44% among women and 27% among men from 2011 to 2021 – substantially exceeding the EU average reductions of 18% among women and 17% for men.

These reductions partly reflect the effectiveness of Luxembourg's public health interventions that minimise exposure to tobacco smoking – such as smoking bans (see Section 3), as well as an effective population-based breast screening programme, the pilot colorectal cancer screening programme and cancer awareness campaigns such as “Octobre rose” and “Mars bleu” (see Section 4).

2 Economic peers are defined as tercile clusters based on 2022 GDP per capita in purchasing power standard terms. Economic peers for LU are AT, BE, DE, DK, IE, IS, NL, NO and SE.  
 3 Avoidable mortality includes both preventable deaths that can be avoided through effective public health and prevention interventions, and treatable deaths that can be avoided through timely and effective healthcare interventions.

**Figure 3. Luxembourg experienced greater reductions in lung and colorectal avoidable mortality rates than the EU averages**



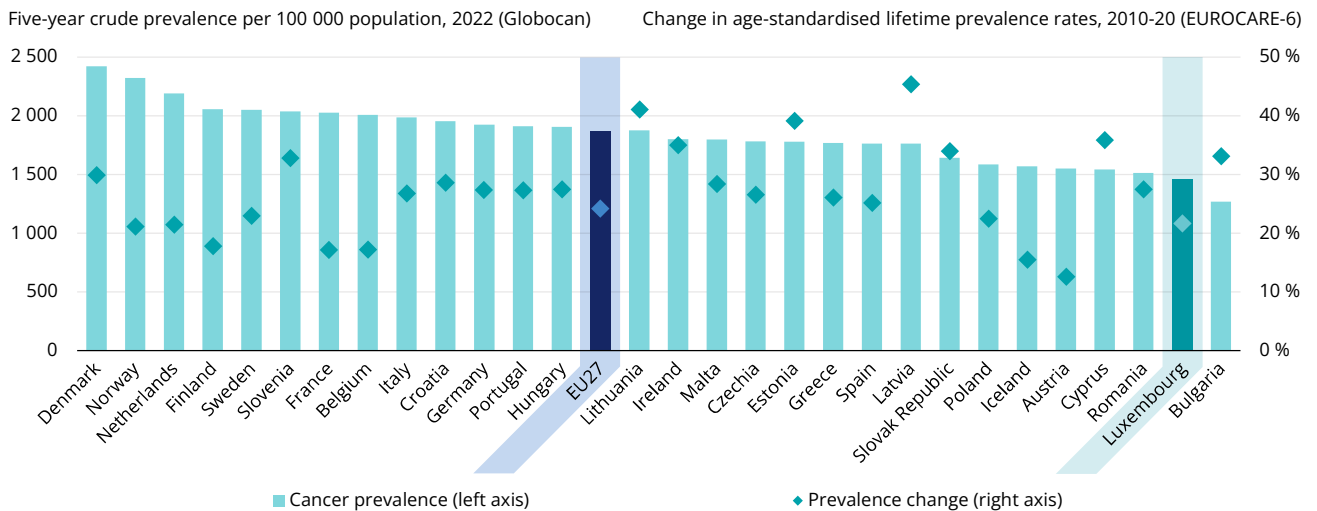
Note: Avoidable mortality figures relate to deaths of people aged under 75.  
Source: Eurostat Database. Data refer to 2021.

**Luxembourg has the second lowest five-year cancer prevalence in the EU**

According to Globocan estimates by the IARC, Luxembourg’s five-year standardised cancer prevalence<sup>4</sup> rate in 2022 was 1 458 cases per 100 000 population, which is the second lowest among EU+2 countries<sup>5</sup> and significantly below the EU average of 1 876 cases per 100 000 (Figure 4).

Additionally, Luxembourg’s cancer prevalence increased by 22% between 2010 and 2020, lower than the EU average increase of 24%. The rise in cancer prevalence highlights the growing importance of focusing on quality of life and survivorship (see Section 5.4), as people are living longer with cancer and more people have a history of the disease.

**Figure 4. Luxembourg’s five-year cancer prevalence is among the lowest in the EU**



Sources: IARC Globocan Database 2024; EUROCARE-6 study (De Angelis et al., 2024).

4 Cancer prevalence refers to the proportion of the population who have been diagnosed with cancer and are still alive, including those currently undergoing treatment for cancer and those who have completed treatment. Five-year cancer prevalence includes people who have been diagnosed within the previous five years, while lifetime prevalence considers those who have ever received a cancer diagnosis.  
5 EU+2 countries include 27 EU Member States (EU27), plus Iceland and Norway.

### Luxembourg’s second National Cancer Plan focuses on improving data, specialised skill networks and patient-centred care

Luxembourg has demonstrated considerable progress in cancer control and prevention, largely due to its proactive healthcare policies. Following the initial launch of a National Cancer Plan in 2014, the country has seen significant advances, including establishment of the National Centre for Human Genetics and the National Cancer Institute, as well as the introduction of a national colorectal cancer screening programme in 2021.

The ongoing National Cancer Plan 2020-24 (extended to 2026) adheres to the recommendations of the European Partnership for Action Against Cancer and is partly aligned with Europe’s Beating Cancer Plan (Box 1). It is

organised across eight axes: better organisation of care, enhanced digitalisation and data collection, promoting patient support across various aspects of cancer care, developing preventive measures, optimised diagnoses and personalised treatments, multidisciplinary care and patient support, organising oncology services into specialised skill networks, and improving paediatric and geriatric cancer care. It also promotes clinical and translational research, supported by expansion of the National Centre for Human Genetics and development of the National Centre for Translational Cancer Research in April 2022, which aims to advance translational oncology research and introduce innovative treatments (National Centre for Translational Cancer Research, 2022).

#### Box 1. Luxembourg’s National Cancer Plan 2020-24 is partly aligned with the four pillars of Europe’s Beating Cancer Plan

The National Cancer Plan 2020-24 aligns in part with Europe’s Beating Cancer Plan (Table 1). While it aims to combat several cancer risk factors such as unhealthy nutrition, obesity, alcohol consumption, and home and workplace hazards that occur from ionising radiation, it does not have a primary focus on early detection. In addition, it aims to enhance multidisciplinary care, supportive care and patient support by addressing all phases of the cancer care pathway – including diagnosis, treatment, survival and end-of-life care – with an emphasis on integrating new diagnostic methods, improving existing ones and providing more personalised treatments. The quality of life for cancer patients is not a primary focus but is covered in the Plan. Research and innovation is a key focus area aimed at improving clinical and translational research, enhancing access to novel treatments, advancing prevention research, and fostering collaboration among various biomedical research and healthcare institutions both within Luxembourg and internationally. The Plan includes key objectives for paediatric cancer, such as improving care quality and monitoring through developing clinical pathways, expanding the national paediatric haematology service, implementing paediatric palliative care, ensuring access to education and providing a smooth transition from paediatric to adult oncological follow-up. Cancer inequalities are not a key focus area, but the topic is covered in the Plan.

**Table 1. Luxembourg’s National Cancer Plan does not prioritise all key areas of Europe’s Beating Cancer Plan**

Pillars of EBCP				Transversal themes of EBCP		
Prevention	Early Detection	Diagnosis and treatment	Quality of life	Cancer inequalities	Paediatric cancer	Research and innovation
●	●	●	●	●	●	●

Notes: EBCP = Europe’s Beating Cancer Plan. Blue indicates that Luxembourg’s National Cancer Plan includes a specific section on the topic; orange indicates that the topic is covered in one of the Plan’s sections without being the only focus; and pink indicates that this topic is not covered in the Plan. Source: Adapted from “Study on mapping and evaluating the implementation of Europe’s Beating Cancer Plan” (not yet published).

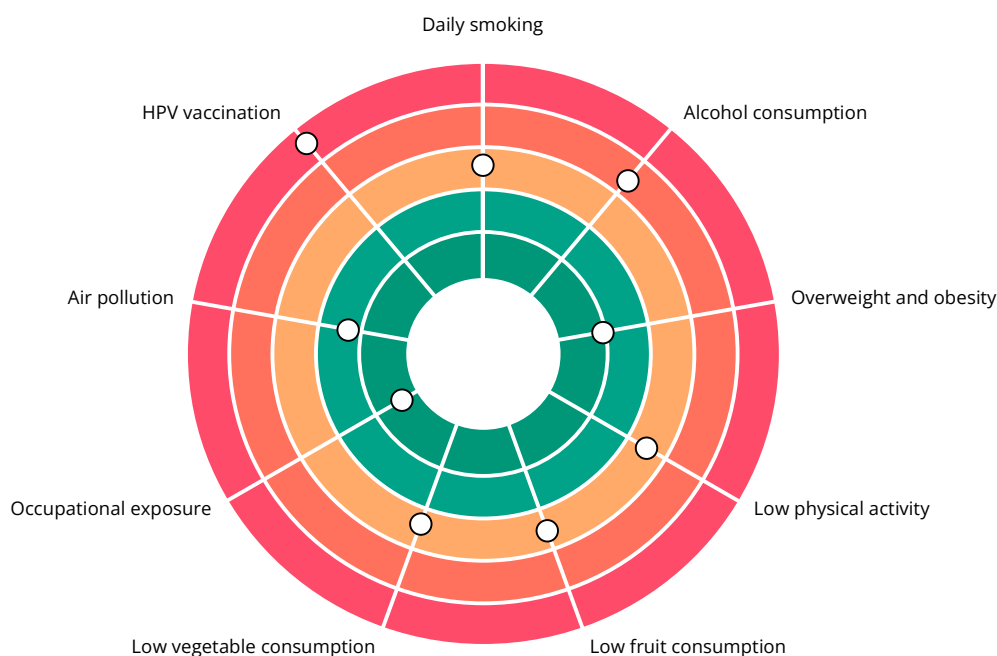
### 3. Risk factors and prevention policies

#### Luxembourg performs better than other EU countries on overweight, obesity, occupational exposure and air pollution

Luxembourg outperforms other EU countries in maintaining low rates of overweight and obesity, occupational exposure to cancer risk factors, and air pollution (Figure 5). This success can be attributed in part to Luxembourg’s relatively high investment in preventive healthcare<sup>6</sup>, which accounted for 7% of its healthcare expenditure

in 2021 and 5% of its healthcare expenditure in 2022 – close to the EU average of 6%. Additionally, Luxembourg’s preventive healthcare spending, adjusted for differences in purchasing power, was among the highest in the EU, at EUR 275 per capita, significantly surpassing the EU average of EUR 213 in 2021. However, the country performs less well than the EU average on alcohol consumption and on human papillomavirus (HPV) vaccination coverage, according to WHO estimations.

**Figure 5. Luxembourg performs less well than other EU countries on estimated human papillomavirus vaccination rates and alcohol consumption**



Notes: 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. Air pollution is measured as particulate matter with a diameter less than 2.5 micrometres (PM<sub>2.5</sub>).  
 Sources: OECD calculations based on 2022 EU-SILC Survey for overweight, obesity, physical activity, fruit and vegetable consumption (in adults); Eurofound Survey for occupational exposure; OECD Health Statistics for smoking, alcohol consumption (in adults) and air pollution; and WHO for HPV vaccination (15-year-old girls).

<sup>6</sup> Prevention expenditures as reported in health accounts should include activities outside of national programmes (e.g. opportunistic cancer screening or counselling for smoking cessation during a routine physician contact), however in practice countries may have difficulty in identifying prevention spending outside of such programmes.

## Since 2019, daily smoking rates in Luxembourg have risen to almost one in five, while e-cigarette use is above the EU average

From 2010 to 2018, Luxembourg saw a decline in daily smoking rates among those aged 15 and over from 18% to 15%. However, rates have risen since then, and the 2023 figure reached the EU average of 18%. The increase was markedly greater among women, with rates climbing from 14% in 2013 to 17% in 2023, while male smoking rates remained relatively stable, increasing for the period 2013-23 from 18% to 19%.

To address high smoking rates, Luxembourg has implemented several initiatives. The Smoking Cessation Programme, introduced in 2008, fully reimburses medical consultations for those enrolled in the Programme, and covers 50% of cessation medications. As of 2014, smoking was banned in closed public spaces, including bars and cafés. Additionally, the National Cancer Foundation launched the Tobacco-Free Generation by 2040 Initiative, which includes discouraging young people from starting to smoke, conducting smoking prevention campaigns, imposing advertising bans and reducing tobacco accessibility.

Usage rates for electronic cigarettes is increasing in Luxembourg, with 10.6% of individuals 15 and over using them regularly in 2023. This figure is above the EU average of 3.2% for regular users. This is despite Luxembourg's stringent regulations on e-cigarettes – including advertising bans except at points of sale, prohibitions in non-smoking areas and bans on cross-border sales. E-cigarette usage is even higher among young people aged 15-24 (of whom 20% are regular users) compared the EU average of 5.9%. According to the 2022 Health Behaviour in School-aged Children Study, 17% of 15-year-olds in Luxembourg reported having used e-cigarettes at least once in the past 30 days, although this figure is lower than the EU average of 21%. Usage in Luxembourg is higher among girls (20%) than boys (14%).

## Alcohol consumption is high in Luxembourg and varies by population group

In Luxembourg, people aged 15 and over drank on average 11 litres of alcohol compared to the EU average of 10 litres in 2022.<sup>7</sup> According to the European Health Interview Survey in 2019, 9% of the population drank daily (compared to 8% across the EU) and 43% drank weekly (compared to 29% across the EU). There is a pronounced socio-economic gradient in alcohol consumption: individuals with higher income levels exhibit greater frequency of drinking. Notably, weekly alcohol consumption in Luxembourg is higher across all income levels than the EU average, with a particularly stark contrast between the lowest (31% compared to 22%) and highest (59% compared to 37%) income quintiles.

Luxembourg is addressing its high alcohol consumption rates with the Luxembourg Action Plan 2020-24, which includes measures aimed at reducing alcohol use, particularly among young people. Another measure being considered is raising the legal drinking age from 16 to 18.

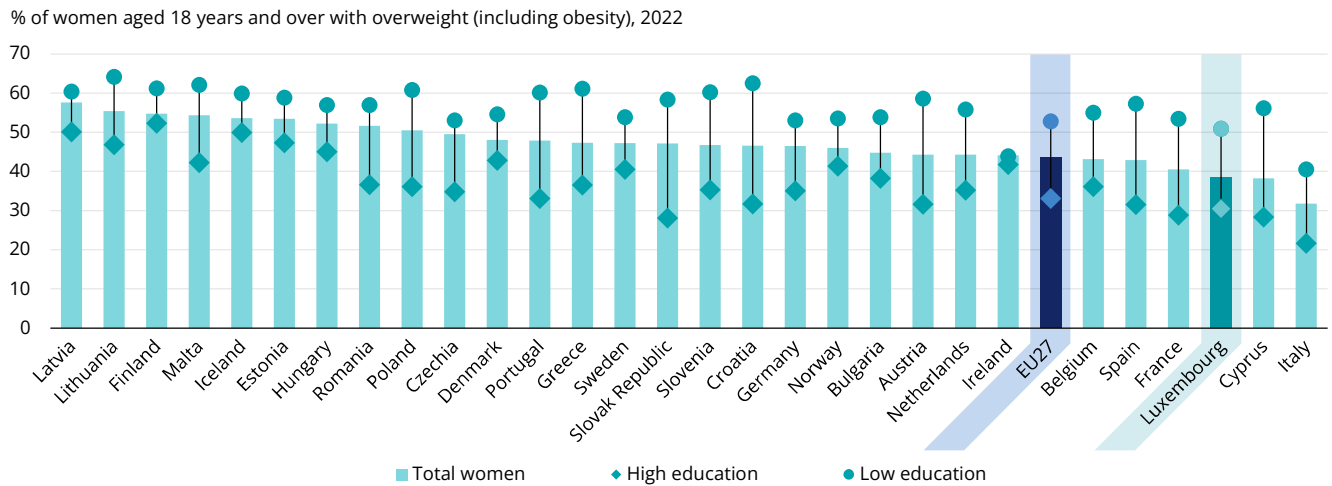
## Luxembourg's adult overweight and obesity rate is the sixth lowest in the EU, but has increased over time

In Luxembourg, the overweight and obesity rate (50%) is slightly below the EU average (51%) according to the EU-SILC 2022. While the average rate across the EU declined from 55% in 2017 to 51% in 2022, Luxembourg experienced an increase from 49% in 2017 to 50% in 2022. As in most other EU countries, overweight and obesity rates are higher among men than women in Luxembourg, with 60% of men classified as overweight or obese in contrast to 38% of women. In 2022, Luxembourg's adolescent overweight and obesity rate remained stable at 22%, slightly higher than the EU average (21%).

Prevalence of overweight and obesity in 2022 was higher among women with lower (51%) than higher education levels (31%) (Figure 6). This disparity follows the trend seen across the EU, where prevalence is 53% among women with lower and 33% among those with higher education levels.

<sup>7</sup> OECD Health Statistics 2024. This figure is based on the average alcohol consumption between France and Germany. Alcohol consumption in Luxembourg, measured through sales, is not representative of the actual consumption by residents, as a significant portion of sales is to non-residents, such as tourists and people from neighbouring countries.

**Figure 6. The overweight and obesity rate among adult women in Luxembourg ranks among the EU's lowest, but is marked by socio-economic inequalities**



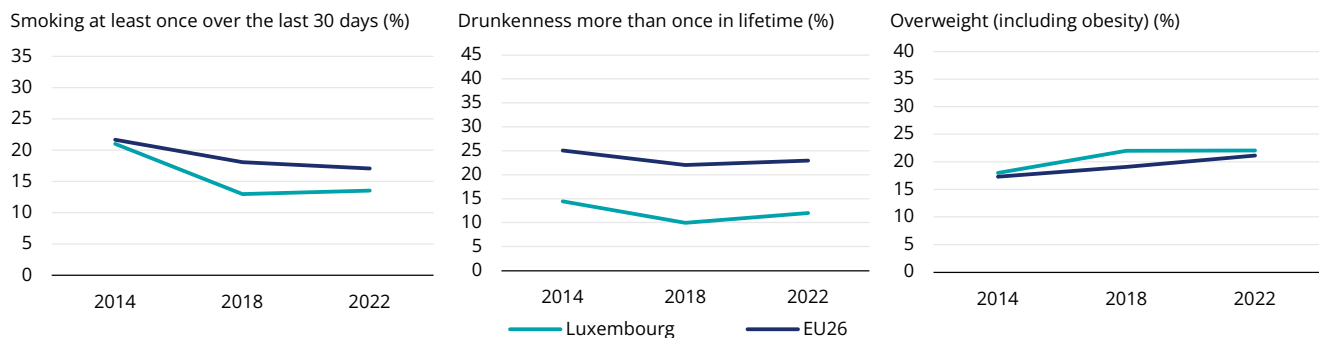
Note: Overweight (including obesity) includes those with a body mass index (BMI) above 25.  
Source: Eurostat Database.

**Adolescents in Luxembourg exhibit lower smoking and drinking rates than their peers in the EU on average**

Smoking among adolescents in Luxembourg decreased by 8 percentage points between 2014 and 2022, and remained lower than the EU average throughout (Figure 7). By 2022, prevalence of daily smoking among adolescents in Luxembourg was

3.6 percentage points lower than the EU average. Adolescents in Luxembourg also consistently have much lower levels of drunkenness more than once in their lifetime than the EU average (12% compared to 23% in 2022). This may be explained by on-premises outlet restrictions on the sale of alcohol and regulations on national television and social media advertising put in place to target this high-risk population.

**Figure 7. Lifestyle risk factors among adolescents in Luxembourg follow EU trends**



Notes: The EU average is unweighted. Data refer to 2022, and are based on children aged 15 years. EU26 for smoking and drunkenness; EU25 for overweight.  
Source: Health Behaviour in School-aged Children Study.

**Rates of physical activity in Luxembourg are increasing, but fruit and vegetable intake is declining**

The rise in overweight and obesity in Luxembourg is occurring alongside declining fruit and vegetable intake. The percentage of the population eating fruit less than once daily increased from 30% in 2017 to 45% in 2022 – greater than the EU average of 39% in 2022. Similarly, vegetable consumption less than once daily increased by 16 percentage

points from 26% in 2017 to 42% in 2022. Among 15-year-olds in Luxembourg, 30% consumed fruits daily and 34% consumed vegetables daily (both similar to the EU averages). To promote healthier dietary choices, Luxembourg implemented the Nutri-Score front-of-pack nutritional labelling in 2021 to educate consumers on the nutritional value of foods and help them choose healthier options. In addition, there are restrictions on the types of food

and drink – such as sugar-sweetened beverages – that are available in schools.

Luxembourg is making progress in promoting physical activity among adults. According to the European Commission Special Eurobarometer on sport and physical activity, the proportion of adults participating in sports and exercise with some regularity increased by 7 percentage points between 2017 and 2022, reaching 63%, compared to a 2 percentage point decrease to 38% across the EU (European Commission, 2022). This rise in sport participation is in part attributed to Luxembourg's national initiative, Eat Healthily, Move More, for 2018-25 (Luxembourg Government, 2024). This aimed to promote healthy eating and exercise across all age groups on both personal and environmental levels. In September 2020, the Ministry of Sport launched the Calendrier du Sport-loisir, a digital leisure sports calendar that simplifies access to information about physical and sporting activities. However, the share of 15-year-olds engaging in 60 minutes of physical activity daily in Luxembourg is quite low – at 13%, below the 15% EU average.

### **Reduced air and chemical exposure are key factors in Luxembourg's public health strategy**

Air pollution – particularly  $PM_{2.5}$  – is a recognised environmental factor contributing to cancer risk. In line with the rest of the EU, Luxembourg has seen a significant reduction in mean population exposure to  $PM_{2.5}$ , from a peak of  $17 \mu\text{g}/\text{m}^3$  in 1990 to  $9 \mu\text{g}/\text{m}^3$  in 2020. Among EU countries, Luxembourg has the eighth lowest exposure to  $PM_{2.5}$  concentrations. The rate reduction is partly attributable to Luxembourg's National Air Pollution Control Programme, which set the goal of decreasing  $PM_{2.5}$  by 40% by 2030 (relative to 2005). In addition, Luxembourg promotes low-polluting transport options – for example, by offering free public transport.

Regarding occupational hazards, in 2021, workers in Luxembourg reported the second lowest exposure to chemical products or substances (18%) among EU+2 countries. Younger workers aged 15-34 reported higher exposure rates (23%) than their older counterparts aged 35-49 (14%) and 50 and over (16%), reflecting the different types of occupation held by younger workers. To reduce hazardous occupational exposure further, Luxembourg introduced its second Radon Plan in 2021, mandating that all workplaces in Luxembourg undergo radon concentration assessments by 2028.

### **Luxembourg's human papillomavirus vaccination programme is gender-neutral and covers children aged 9 to 14**

In Luxembourg, the HPV vaccination programme was established in 2008 and has undergone several changes to enhance its scope and efficacy. In 2014, the programme was updated to 2 instead of 3 doses and expanded to include girls aged 11-13. Subsequently, in 2018 the recommendation was updated to include universal vaccination (both girls and boys) and the vaccination window was extended to children aged 9-13. Moreover, the vaccine was upgraded by increasing protection against additional HPV strains. By 2023, the programme had broadened to include both girls and boys aged 9-14, as well as at-risk individuals older than 13. Luxembourg also proposes a catch-up vaccination for adolescents and young adults who have not yet been vaccinated, aged 15-20 years old. Alongside these changes, a communication strategy was implemented in 2019, targeting healthcare professionals and the general population, to increase awareness and uptake of the vaccine. Since 2018, the Health Directorate has provided HPV vaccines free of charge to doctors for use among the target population (iPAAC, 2021). In 2023, recommendations were updated to include adolescents and young adults aged 15-20 who are not yet vaccinated.

Although there is no school-based vaccination programme, school health nurses are responsible for entering vaccination data records into electronic school health records. If information on the HPV vaccine dose is missing, school health nurses send reminders to parents and tutors for students to get vaccinated.

Between 2016 and 2023, according to WHO estimates, the proportion of girls who received all recommended doses of the HPV vaccine by age 15 was 43% in Luxembourg, compared to 64% on average in the EU. Notably, no assessment of HPV vaccination coverage has been conducted since the vaccine distribution shifted to medical practices in 2018, making data collection challenging. However, the rollout of the electronic vaccination record, initiated in 2022 after delays from the pandemic, is expected to improve data collection over the next five years. In 2024, the Health Directorate launched a survey to assess HPV vaccination coverage among individuals aged 9-20.

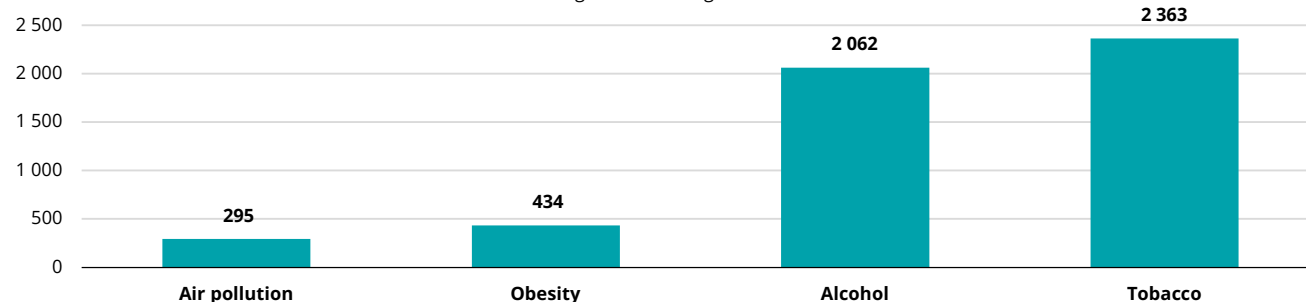
## New cancer cases in Luxembourg could be prevented by achieving risk factor reductions

Although people's risk of developing cancer is determined by a complex combination of factors, intensified efforts to decrease the prevalence of lifestyle-related risk factors have the potential to reduce cancer incidence in Luxembourg by thousands of cases over the next two decades, according to OECD Strategic Public Health Planning

(SPHeP) modelling work. Achieving alcohol targets could prevent 2 062 new cancer cases over the next two decades (Figure 8). Meeting tobacco targets would result in the most significant reduction in new cancer cases, with an estimated 2 363 cases prevented. Furthermore, meeting obesity targets would prevent around 434 new cancer cases, and meeting air pollution targets would prevent around 295 cases.

**Figure 8. The greatest cancer case reductions would occur if Luxembourg met tobacco and alcohol targets**

Number of cancer cases avoided between 2023-50 due to achieving risk factor targets



Notes: The target for tobacco is a 30% reduction in tobacco use between 2010 and 2025, and less than 5% of the population using tobacco by 2040. For alcohol, the target is a reduction of at least 20% in overall alcohol consumption and a 20% reduction in heavy drinking (six or more alcoholic drinks on a single occasion for adults) between 2010 and 2030. For air pollution, it is an annual average  $PM_{2.5}$  level capped at  $10 \mu g/m^3$  by 2030 and at  $5 \mu g/m^3$  by 2050. For obesity, the target is a reduction to the 2010 obesity level by 2025.

Source: OECD (2024b), *Tackling the Impact of Cancer on Health, the Economy and Society*, <https://doi.org/10.1787/85e7c3ba-en>.

## 4. Early detection

### Luxembourg has two population-based screening programmes for breast and colorectal cancers

Luxembourg's national mammography programme follows the European guidelines on breast cancer screening and diagnosis (European Commission, 2024). Since July 2024, this population-based programme for women aged 50-69 has been extended to women aged 45-74. Women affiliated with the National Health Fund are eligible for screening, receiving a direct invitation that includes a detailed explanation to aid decision making and a voucher to book an appointment at their chosen radiology centre. The invitations are valid for two years.

In 2021, Luxembourg established a pilot population-based colorectal cancer screening programme targeting men and women aged 55-74 who are affiliated with the National Health Fund. Participants are invited every two years to do faecal immunochemical testing. Invitations are sent by post to the eligible population. The test can be performed at home by requesting a test kit online or by phone, or by picking up a free test kit from an authorised laboratory. From July 2024, the age range eligible to participate in the screening programme was increased to 45-74. From September 2024, free screening sample tests are also available directly from pharmacies (Chamber of Deputies, 2024), an initiative aimed at increasing participation rates.

Unlike many EU countries, Luxembourg does not offer a population-based cervical cancer screening programme. Measures related to implementing cervical cancer screening were included in the National Cancer Plans of 2014-18 and 2020-24 (prolonged to 2026). As per national recommendations published in 2019, women aged 25-69 are recommended to consult with their clinicians regarding cervical cancer screening, which entails co-testing (both HPV and cytology on the same sample). Furthermore, there are no plans to establish screening programmes for lung, prostate and gastric cancers in Luxembourg.

### Breast cancer screening rates in Luxembourg are declining steadily, but there has been an upturn since the COVID-19 pandemic

Since its inception in 1992, approximately 430 500 women aged between 50 and 70 have participated in Luxembourg's breast cancer screening programme. By 2022, the programme had detected cancer in 2 900 of these participants (Luxembourg Government, 2023). Although the number of women aged 50-69 screened for breast cancer increased from 14 586 in 2010 to 18 304 in 2022, likely due to the growing population in this age group, participation rates declined from 62% to 52% over the same period (Figure 9). Due to breast cancer epidemiology reports showing an apparent increase in the incidence in these age groups, in July 2024, the age range eligible for screening was expanded to 45-74, accompanied by an increase in available mammography screening slots.

As in many other EU countries, cancer screening uptake varies according to socio-economic characteristics. According to the Survey of Health, Ageing and Retirement in Europe, in 2021, 68% of women in Luxembourg with lower education levels had had a mammogram, compared to 71% of women with higher education levels.

The breast cancer screening programme is achieving its objectives of early detection and better prognosis. An evaluation of the breast cancer screening programme in Luxembourg, using data from the National Cancer Registry (NCR) for the period between 2013 and 2018, revealed that screen-detected breast cancer cases were diagnosed at an earlier stage, at younger ages, more often in situ, and were more frequently treated with conservative surgery compared to diagnosis-detected cases. (Rollet et al., 2024). In recent years, Luxembourg explored the use of advanced technologies, such as artificial intelligence (AI) in mammography screening to improve the efficiency of breast cancer early detection. In addition, there are ongoing innovations for lung and breast cancer diagnostics (Box 2).

### Box 2. Innovations in screening programmes and early detection

Luxembourg contributed to the development of less invasive diagnostic techniques through the CANCER-ID Project under the Innovative Medicines Initiative. The Project focused on developing methods to capture and analyse cancer cells and genetic material from blood samples, primarily for lung and breast cancer diagnostics. It pioneered use of “liquid biopsies”, which require only a blood sample rather than traditional, more invasive biopsy techniques, thus simplifying the diagnostic process for patients (Innovative Medicines Initiative, 2020).

#### Cervical cancer screening rates in Luxembourg peaked in 2017 but have dropped since

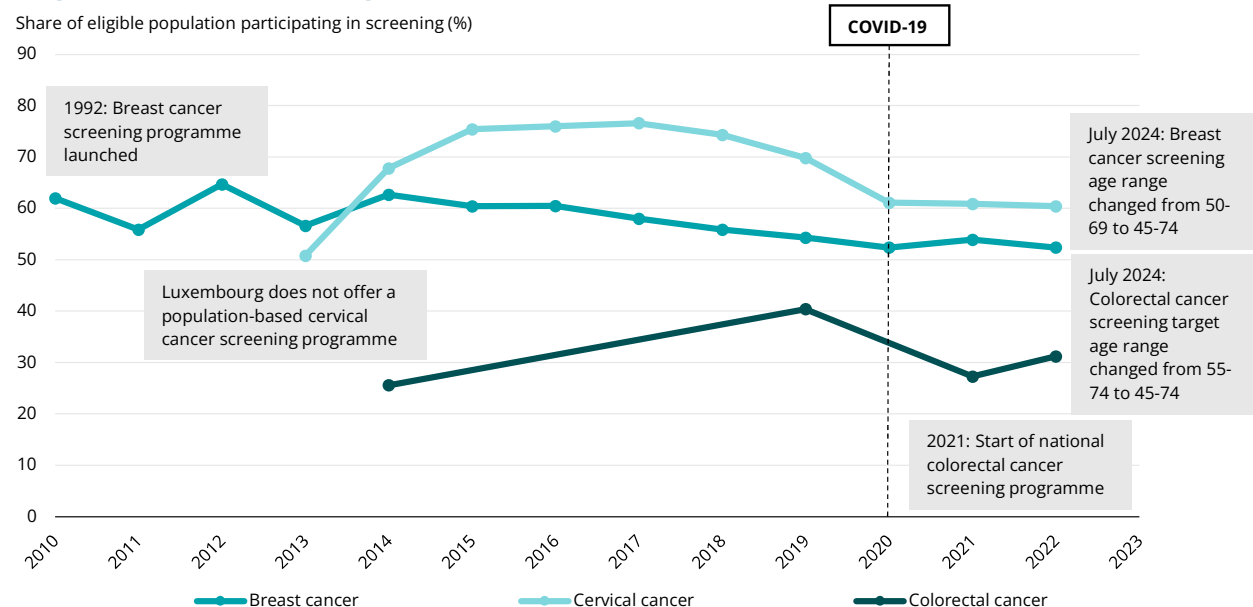
Although Luxembourg lacks a population-based cervical cancer screening programme, opting instead for opportunistic screening at the discretion of individuals and their clinicians, the country reports one of the highest rates of cervical smear tests in EU+2 countries. Around 60% of women aged 20-69 reported having a smear test within the past three years in 2022, surpassing the EU average of 55%. However, this figure represents a decline from the 77% participation rate recorded in 2017 (Figure 9).

The reduction in screening rates began before the COVID-19 pandemic, which saw cancer screening rates decline and waiting times increase as the country paused screening during the first lockdown. The annual reduction in 2019-20 was 9 percentage points, compared to 5 percentage points in 2018-19. Nevertheless, there are indications that the trend may be stabilising following the pandemic, with only a marginal decrease of 0.7 percentage points in 2020-22.

#### Colorectal cancer screening uptake remains limited

Colorectal cancer ranks as the second leading cause of cancer-related death in Luxembourg, but early detection can cure the disease in nine out of ten cases, highlighting the critical need for timely diagnosis. Participation in the national colorectal cancer screening programme among those aged 55-74 was 31% in 2022 – a 9 percentage point reduction compared to 2019, when only the pilot programme was in place and the rate was 40% (Figure 9). This decline may be attributed to the difference in data collection methods: survey data were used for 2014 and 2019, whereas programme data were used for 2021 and 2022. However, there was an increase in participation rates by 4 percentage points from 2021 to 2022, following the introduction of the national colorectal cancer screening programme in 2021. Building on these efforts, the age range eligible for colorectal cancer screening was increased in 2024 from 55-74 to 45-74, and free screening sample tests will be made more widely available in pharmacies.

**Figure 9. More than 50% of the population participated in breast and cervical cancer screening programmes in Luxembourg**



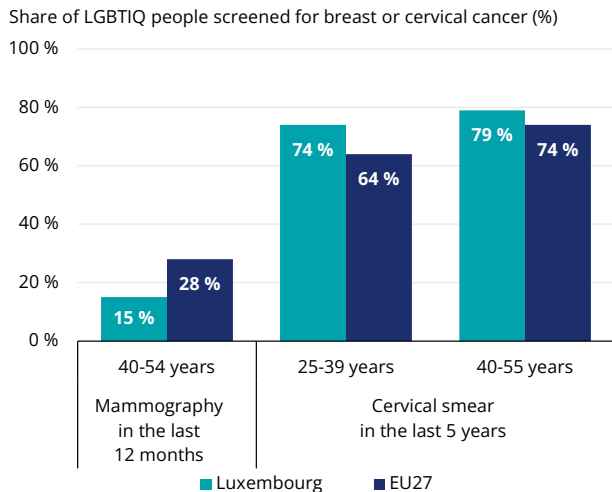
Notes: Data refer to mammography screening among women aged 50-69 within the past two years, cervical cancer screening among women aged 20-69 within the past three years and colorectal cancer screening among the population aged 55-74 within the past two years. Data points are sourced from administrative data except for the years 2014 and 2019 for colorectal cancer, which come from survey data.

Source: OECD Health Statistics 2024.

**Among LGBTIQ people, breast cancer screening participation is lower than the EU average, while cervical cancer screening rates are higher**

According to the EU LGBTIQ Survey III, participation in breast cancer screening among LGBTIQ persons is lower in Luxembourg than in other EU countries (Figure 10). In 2023, 15% of LGBTIQ cisgender females, trans women and intersex people aged 40-54 years reported having had a mammogram in the previous 12 months, much lower than the EU average of 28%. For cervical cancer screening, 74% of the relevant LGBTIQ population aged 25-39 in Luxembourg reported having had a smear test in the previous 5 years (higher than the 64% in the EU), while 79% of those aged 40-55 in Luxembourg reported a smear test (higher than the 74% in the EU).

**Figure 10. LGBTIQ persons in Luxembourg participate less in breast cancer screening but more in cervical cancer screening than their counterparts in the EU**



*Note: LGBTIQ survey results refer to age groups and/or screening intervals that do not align with the population screening approach in EU countries, and should not be compared. Source: The European Union Agency for Fundamental Rights (EU LGBTIQ Survey III).*

**Luxembourg’s multiple outreach campaigns raise cancer awareness**

Luxembourg’s efforts to enhance cancer awareness are integral to its strategy to reduce disparities in access to screening and early diagnosis. The National Cancer Plan 2020-24 prioritises public education on cancer risk factors through robust awareness campaigns. Luxembourg’s campaigns leverage a mix of media outreach, information leaflets and events tailored to various types of cancer. Campaigns include “Octobre rose” and “Broschkriibslaf” for breast cancer, “Mars bleu” for colorectal cancer, “Relais pour la vie” representing all cancers, and “Lët Go Gold” for paediatric cancer.

These initiatives go beyond traditional media, with awareness posters displayed in pharmacies and doctors’ offices, community engagement in local markets, and educational videos on social networks to increase the visibility and impact of the messages. Additionally, to promote inclusivity and reach diverse populations, cancer screening invitation letters are issued in five languages, reflecting a targeted approach to engage vulnerable and remote communities effectively. Through these comprehensive strategies, Luxembourg aims to improve health literacy and encourage engagement in cancer prevention and early detection.

# 5. Cancer care performance

## 5.1 Accessibility

### Reimbursement for cancer care in Luxembourg covers consultations, treatment and medications

Luxembourg's public health financing system is characterised by a high share of public funding, contributing to a low level of out-of-pocket spending by affiliated residents. In 2022, public expenditure accounted for 86% of total health spending, while out-of-pocket spending represented only 9% – significantly lower than the EU average of 15%.

In Luxembourg's healthcare system, the financial aspect of cancer care is structured to mitigate out-of-pocket expenses for patients. The National Health Fund reimburses 88% of outpatient medical consultations at the official rate based on a percentage co-payment. All expenses related to chemotherapy, immunotherapy, targeted therapy and radiotherapy are fully covered under the basic or statutory health insurance scheme. Patients with private health insurance, from the Mutual Supplementary Medical Fund or private insurance companies, receive additional reimbursements or benefits, contingent on their specific policy provisions (Cancer Foundation Luxembourg, 2024).

For cancer prescription medications, the National Health Fund reimburses 80% of the costs at the normal rate, with a preferential rate of 100% and a reduced rate of 40%. In certain cases – such as for bisphosphonates in oncological uses, major opioid analgesics for cancer patients and analgesics for palliative care – the National Health Fund covers up to 100% of the cost, pending approval. Furthermore, if a patient's annual personal contribution to healthcare costs exceeds 2.5% of their contributory income from the previous year, they can send an application for additional reimbursement of expenses beyond this threshold. This system ensures that financial barriers are minimised for those undergoing continuous and often costly cancer treatments, facilitating better access to necessary medical care.

### Luxembourg's cancer care is co-ordinated by the National Cancer Institute

Established in 2015 during the first National Cancer Plan, the National Cancer Institute plays a central role in co-ordinating cancer care in Luxembourg. Its members include the four general hospitals – Hospital Centre of Luxembourg, Hospital Centre of the North, Emile Mayrisch Hospital Centre and Robert Schuman Hospital – and the radiotherapy centre Francois Baclesse, which together provide comprehensive cancer treatment and care. Supporting patients and their families are cancer foundations such as Foundation Cancer and Fondation Kriibskrank Kanner, as well as patient associations such as Patiente Vertriebung. Additionally, the National Cancer Platform acts as an advisory body for developing, implementing and monitoring the National Cancer Plan. Furthermore, Luxembourg leverages its collaboration with the European Reference Networks for Rare Cancers (EURACAN) to provide patients access to diagnoses and care for rare cancers such as brain or neuroendocrine cancers, benefiting from the expertise of 106 cancer centres across 26 countries in the European Union.

Since its inception, the National Cancer Institute has implemented several key initiatives, including multidisciplinary oncology board meetings, national benchmarks, care pathways, accreditation processes for oncology services and a molecular diagnostic pilot programme. These efforts aim to enhance the quality and co-ordination of cancer care across Luxembourg (see Section 5.2).

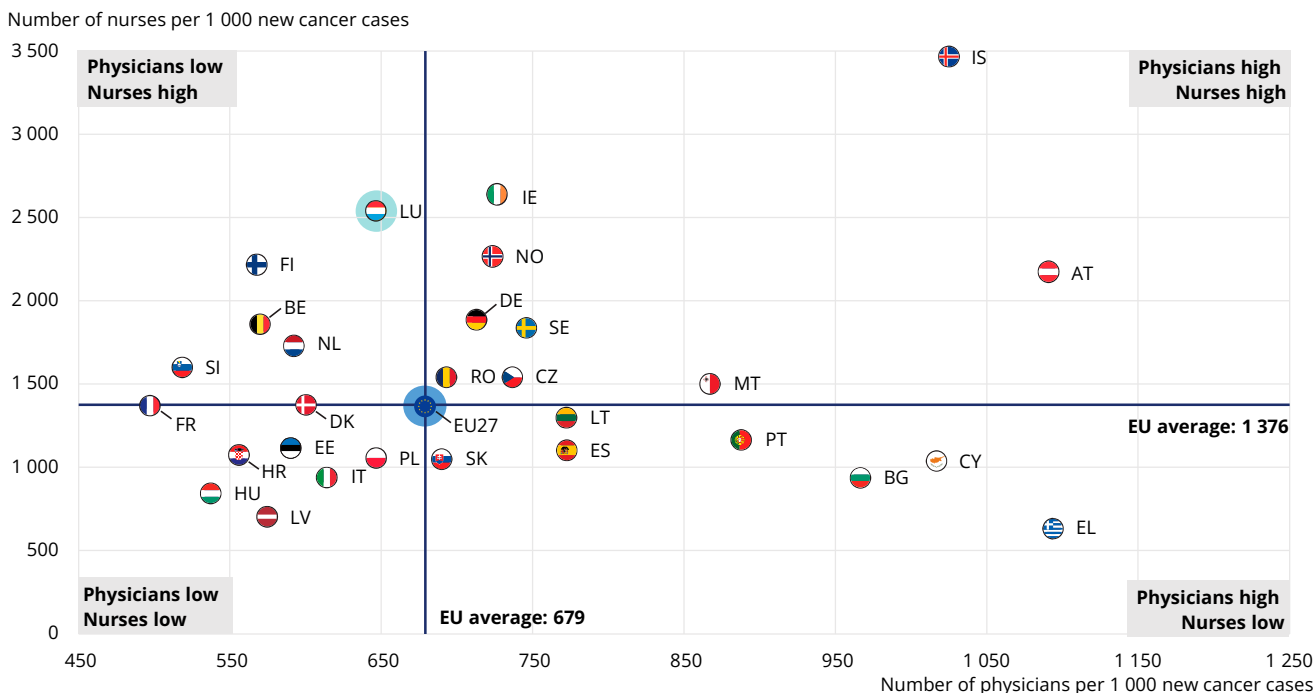
### Luxembourg has a high nurse-to-physician ratio

Luxembourg is one of five EU countries characterised by a low number of physicians and a high number of nurses per 1 000 new cancer cases (Figure 11). The country has 647 physicians per 1 000 new cancer cases, which is below the EU average of 679 per 1 000. One reason for this low rate is that Luxembourg did not offer medical studies at the university level until September 2020, when the Bachelor of Medicine degree was established, along with three postgraduate specialty medical training programmes, including oncology. The country is aiming to increase the supply of doctors through its 2023 National Health Plan, with the objective of renewing and training more than 1 200 doctors by 2030 (Ministry of

Health and Social Security, 2023a). Conversely, Luxembourg has one of the highest ratios of nurses within the EU, with 2 538 nurses per 1 000 new

cancer cases. This figure is only surpassed by Ireland and Iceland, and significantly exceeds the EU average of 1 376 per 1 000.

**Figure 11. Luxembourg’s medical workforce is characterised by a high nurse-to-physician ratio**



Notes: The data on nurses include all categories of nurses (not only those meeting the EU Directive on the Recognition of Professional Qualifications). Data refer to practising nurses except in Portugal and the Slovak Republic, where they refer to professionally active nurses. In Greece, the number of nurses is underestimated as it only includes those working in hospitals. In Portugal and Greece, data refer to all doctors licensed to practise, resulting in a large overestimation of the number of practising doctors. The EU average is unweighted.

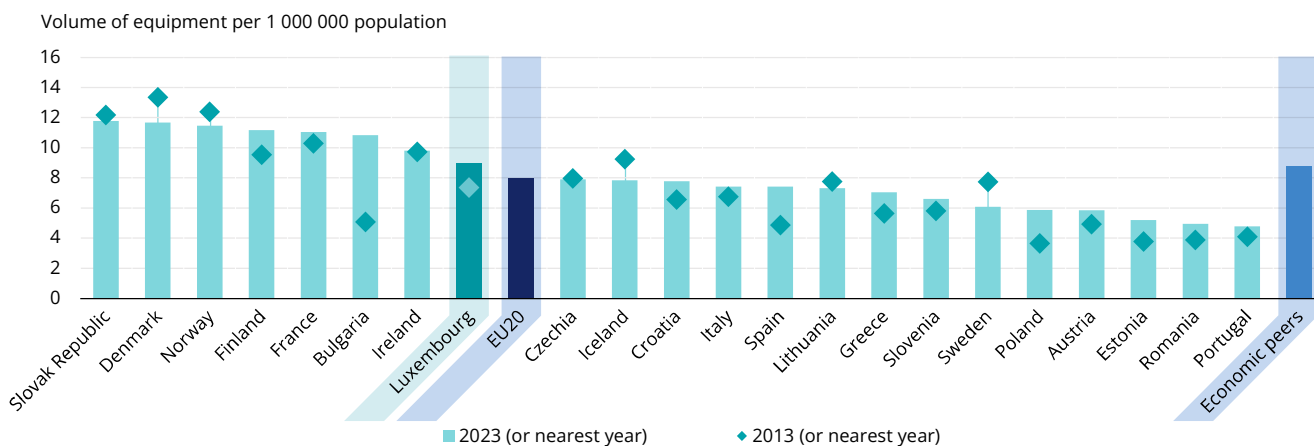
Source: OECD Health Statistics 2024. Data refer to 2022 (or latest available year) for all countries except Luxembourg (2017).

Although the number of nursing roles is high relative to the EU average, one area that needs attention is nursing education and career development. According to the 2020 European Oncology Nursing Society (EONS) Cancer Nursing Index, advanced cancer nursing roles in Luxembourg have not been fully implemented or established at a national level. The country also does not have higher education teachers lecturing on cancer, a professional network such as a cancer nursing society, or board positions dedicated to cancer nursing in cancer centres. Luxembourg does, however, have a National Cancer Plan that includes nursing care, and each hospital offers a continuous training programme for oncology nurses.

**Luxembourg has significantly increased its supply of radiotherapy equipment**

In 2022, Luxembourg reported a density of radiation therapy equipment 12% above the EU average of 8 per 1 000 000 and 2% higher than the average among its economic peers (Figure 12). Over the last decade, Luxembourg has seen a significant increase in its radiation therapy resources: the equipment density rose from 7 per 1 000 000 in 2012 to 9 per 1 000 000 in 2023 – an increase of 22%.

Specifically, Luxembourg had six radiation therapy machines (four for photon and electron beam therapies and two for brachytherapy or electronic X-ray). Most of these machines (four) are 10 to 15 years old, with one being 5 to 10 years old and the oldest between 20 and 30 years old.

**Figure 12. Luxembourg has a greater supply of radiotherapy equipment than the EU average**

Notes: The vast majority of radiotherapy equipment in EU countries is found in hospitals. Data for Portugal and France includes equipment in hospitals only while data for other countries refer to all equipment. Economic Peers refers to tertile clusters based on 2022 GDP per capita in purchasing power standard terms. Economic peers for LU are AT, DK, IE, IS, NO and SE. The EU average is unweighted.

Source: OECD Health Statistics 2024.

### Cancer diagnosis and treatment waiting times vary based on cancer type

Luxembourg has implemented targeted waiting times to enhance access to cancer care: guidelines recommend that 95% of cancer patients are diagnosed within five working days. Since 2016, the country has significantly enhanced the efficiency of its diagnostic services through a comprehensive reorganisation of the National Health Laboratory. By reducing outsourcing of diagnostic tests to laboratories abroad and centralising management within main hospitals, Luxembourg has largely reduced diagnostic waiting times exceeding 14 working days. However, the average response time increased from 8.7 days in 2022 to 13.8 days by November 2023, with an average of 15 days for certain cancers, including breast-related pathologies.

Luxembourg's policies diverge from the majority of EU countries that apply uniform waiting time guidelines across all cancer types – instead, they tailor waiting times to the type of cancer. For example, the waiting time between chemotherapy and radiotherapy for gynaecological cancers is set at four weeks, or two weeks following the receipt of the pathological analysis report. Additionally, Luxembourg has established specific waiting time targets for other major cancers, including prostate, breast, lung and colorectal cancers.

### Fast-track pathways and referral mechanisms are designed to expedite the transition from initial cancer detection to diagnosis

Luxembourg has developed fast-track pathways and referral mechanisms to increase timely access to treatment and improve patient outcomes.

These strategies are applied across various critical areas – including diagnostic services, specialist referrals and initiation of treatment. Application of fast-track processes varies based on the type of cancer, facilitating a more tailored approach that optimises care for each patient. Moreover, Luxembourg's monitoring efforts primarily focus on age and sex, aiming to understand disparities within the population.

## 5.2 Quality

### Luxembourg has made significant progress in reducing the potential years of life lost to cancer

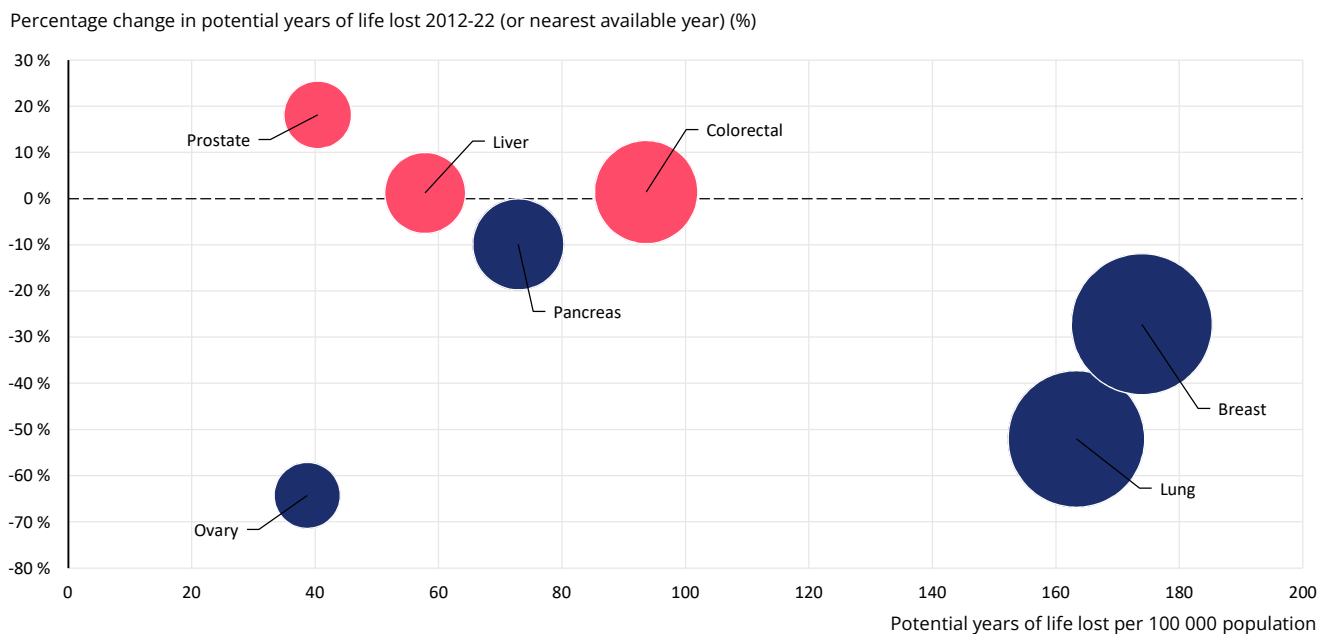
Potential years of life lost (PYLL) is an interesting complementary measure of the impact of different cancers on society, because it puts a higher weight on cancer deaths among younger individuals. Examining the change in PYLL over time across various cancer sites can point to improvements in cancer care systems via reductions in premature mortality. In 2022, Luxembourg recorded 826 PYLL per 100 000 population due to cancer, which is 39% lower than the EU average of 1 355 per 100 000. Since 2012, Luxembourg has experienced a 37% decrease in PYLL – a greater reduction than the EU average decrease of 19%. The cancer responsible for more potential years of list lost were lung cancer at 163 per 100 000 population in 2022 (Figure 13). Among women, breast cancer accounted for 174 PYLL per 100 000 women in 2022. However, these figures represent a 52% and 27% decrease respectively in PYLL since 2012. Other cancers for which there were significant reductions in PYLL in 2012-22 include ovarian and pancreatic cancers. In contrast, liver, colorectal and prostate cancer

registered an increase in the number of PYLL between 2012 and 2022.

While cancer mortality and screening rates are accessible for most cancer types in Luxembourg,

the absence of systematically collected five-year survival data makes assessment of cancer care quality challenging.

**Figure 13. The rate of potential years of life lost to cancer fell in Luxembourg across most cancer types between 2012-22**



Notes: The rate of PYLL from breast, cervical and ovarian cancer is calculated in women only, while the rate of PYLL from prostate cancer refers to men. Pink bubbles signal an increase in the percentage change in PYLL during 2012-22 (or latest available year); blue bubbles signal a decrease. The size of the bubbles is proportional to the PYLL rates in 2022. Source: OECD Health Statistics 2024.

### Luxembourg enhances cancer care quality with multidisciplinary boards and standardised patient pathways

Luxembourg conducts multidisciplinary oncology board meetings. Introduced in 2016 during the first National Cancer Plan, these boards aim to enhance the quality of care and patient outcomes by bringing together specialists from various oncology disciplines – including oncologists, nuclear medicine physicians, radiologists, radiotherapists, surgeons, oncology nurses, gynaecologists, plastic surgeons and psychologists – to review and organise patient care plans based on the latest scientific evidence. The primary functions of the boards include improving communication and co-ordination across specialties, as well as evaluating, ensuring and enhancing adherence to best practice. They provide a platform for discussing complex cases, sharing knowledge and fostering continuous improvement in care decisions, which ultimately leads to better patient outcomes.

Since 2016, the number and variety of these boards have increased significantly, reflecting the growing

focus on multidisciplinary care within the National Cancer Plan. This collaborative approach is categorised into local boards for common cancers, national boards overseen by the National Cancer Institute for rare cancers, and molecular boards that focus on personalised medicine through genetic sequencing of tumours, contributing to tailored and effective cancer treatment strategies (Hospital Centre of Luxembourg, 2022).

### Luxembourg’s National Cancer Registry plays an integral role in cancer care and research

Luxembourg’s National Cancer Registry, overseen by the Ministry of Health and Social Security, covers the entire population and includes detailed data on patient characteristics, tumour characteristics (clinical and histological description, diagnosis and initial treatment) and tumour follow-up (last contact, death, recurrence, distant metastases) (Luxembourg Government, 2020). The registry is tasked with cancer surveillance, evaluating public health measures in prevention and screening, assessing quality of care for cancer patients, monitoring the National Cancer Plan, and supporting epidemiological and

clinical research. Epidemiological data on cancer incidence and mortality have been available from the National Health Laboratory's Morphological Tumour Registry since 1980 and the Registry of Death Causes of the Health Directorate since 1998. Like many EU countries, Luxembourg has not yet established a database for cancer patient-reported indicators, but efforts to develop one are currently underway.

### **Clinical guidelines and accreditation systems provide a framework for monitoring and guiding cancer care performance in Luxembourg**

Although Luxembourg has yet to establish systematic performance monitoring and audits, it has strengthened co-ordination and quality of cancer care through development of patient pathways, guidelines and provider accreditation systems as part of the National Cancer Plan. Patient pathways are designed to streamline and organise patient care within healthcare establishments across the country, promoting higher quality and more efficient healthcare provision. The guidelines are concise decision-support documents created by multidisciplinary working groups of healthcare professionals, co-ordinated by the National Cancer Institute. The finalised guidelines and patient pathways are published by the Scientific Council on Health (Scientific Council on Health, 2024).

In 2023, the National Cancer Institute further integrated patient representatives into all working groups responsible for developing these guidelines and pathways, ensuring that patient perspectives are considered in decision-making processes (National Cancer Institute, 2023). In addition, the Institute completed the national colorectal cancer pathway, based on the European Innovative Partnership for Action Against Cancer (iPAAC) model. Luxembourg is also a part of the European Network of Comprehensive Cancer Centres Joint Action (JA CraNE) initiative, which aims to create a standardised European pathway for lung cancer. Breast and prostate cancer pathways are being revised to fit the European iPAAC model.

Preliminary discussions have taken place on the development of oncology competence networks in Luxembourg between the National Cancer Institute and the Directorate of Health. The lung cancer network, currently being implemented through JA CraNE, could become the first national oncology competence network.

### **Luxembourg is putting patients at the centre of cancer care through assessment of patient-reported outcome measures**

The Luxembourg Institute of Health launched the Cancer Programme in 2023 – an innovative initiative designed to improve the quality of national cancer care (Luxembourg Institute of Health, 2024b). It assesses patient-reported outcome measures to identify how patients assess the results of their care – including outcomes related to quality of life, physical functioning and psychological well-being – with a target recruitment of 500 participants across the country. The Ministry of Health and Social Security has also recently mandated the systematic measurement of patient-reported outcome measures for people with breast cancer, with data collection being piloted in all hospitals.

The Colive Cancer study includes an online platform that allows patients to share feedback on their care experiences and discuss their quality of life, supporting a patient-centred approach in Luxembourg's cancer care strategy. The initiative gathers detailed information about diagnoses, treatment and patient support. The data will be used to identify strengths and areas for improvement in the cancer care system.

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

### **The burden of cancer on health expenditure is expected to be higher than in the EU**

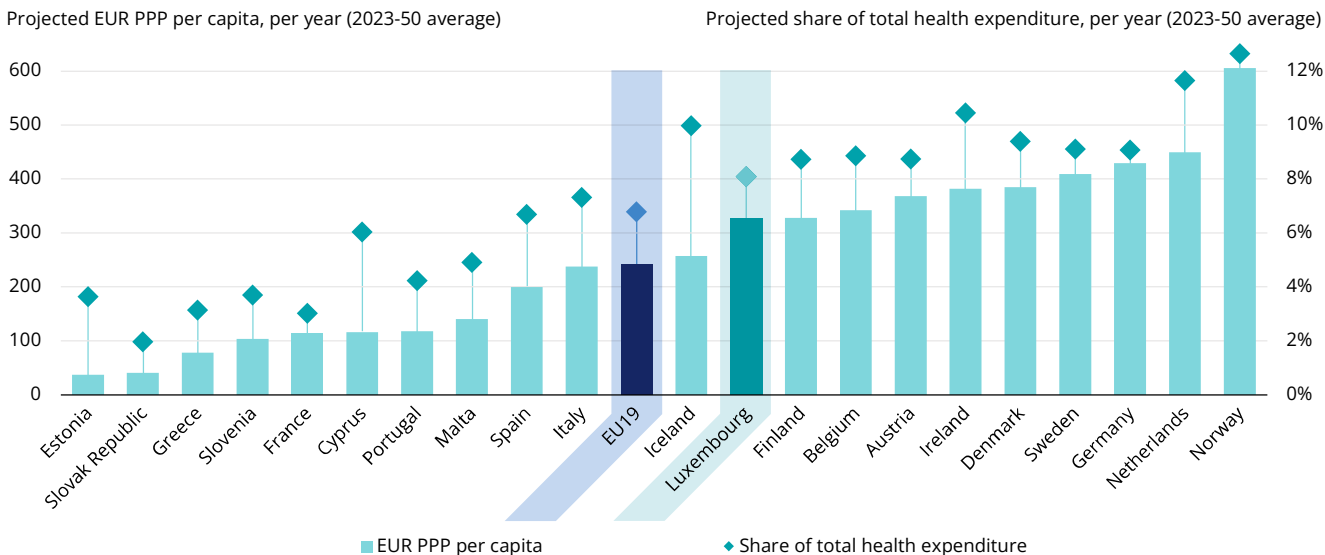
According to OECD SPHeP modelling work, between 2023 and 2050, total health expenditure is estimated to be 8% higher in Luxembourg due to the burden of cancer. This equates to an average of EUR (PPP) 327 per person per year (Figure 14). This figure is higher than the EU19 average (EUR 242).

Overall, the per capita health expenditure on cancer care is expected to grow by 77% in Luxembourg between 2023 and 2050, compared to 59% in the EU27.

In terms of other costs to the economy, it is estimated that cancer will have a major impact on the workforce in Luxembourg. Between 2023 and 2050 on average, there is expected to be a loss of 130 full-time equivalent workers (FTEs) per 100 000 people due to the need to reduce employment because of cancer, as well as losses of 33 FTEs per 100 000 people due to absenteeism and 38 per 100 000 due to presenteeism.<sup>8</sup>

<sup>8</sup> Presenteeism refers to lost productivity that occurs when employees are not fully functioning in the workplace because of an illness, injury or other condition.

**Figure 14. The projected burden of cancer on total health expenditure is higher in Luxembourg than in the EU**

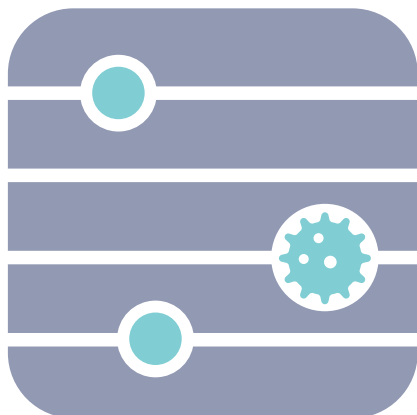


Note: The EU average is unweighted.

Source: OECD (2024b), *Tackling the Impact of Cancer on Health, the Economy and Society*, <https://doi.org/10.1787/85e7c3ba-en>.

### Luxembourg manages cancer treatment costs through joint health technology assessments

Luxembourg’s approach to managing access to and reimbursement of oncology medicines incorporates a comprehensive evaluation framework through joint health technology assessments (HTA) called the Beneluxa Initiative – a partnership involving Belgium, the Netherlands, Luxembourg, Austria and Ireland. This collaboration focuses on ensuring sustainable access to innovative medications at manageable costs for populations living in relatively small countries. Beneluxa activities include horizon scanning of pharmaceuticals, information sharing, policy exchange and joint HTA efforts, particularly for medicines pricing and reimbursement, reflecting a shared commitment to cost-effective cancer treatments.



## 5.4 Well-being and quality of life

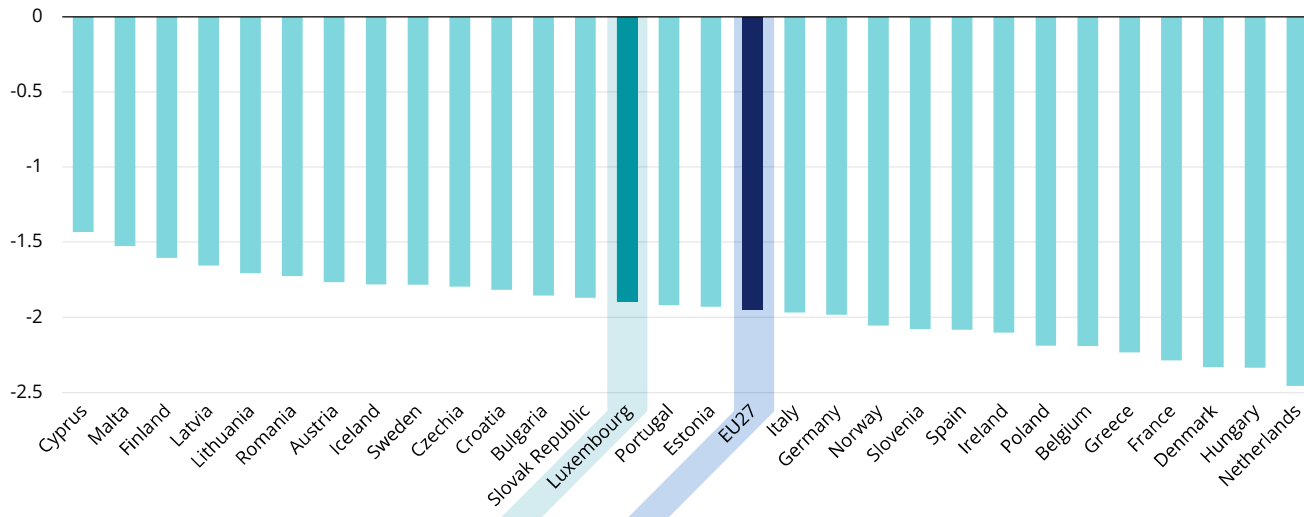
### Cancer is expected to have an impact on life expectancy and mental health disorders in Luxembourg

According to OECD SPHeP modelling work, in Luxembourg between 2023 and 2050, cancer is expected to reduce life expectancy by an average of 1.9 years compared to a scenario without cancer (Figure 15). This is fairly similar to the rate in the EU. For context, it took Luxembourg from 2010 to 2022 to increase its life expectancy by 2 years.

In addition, cancer takes a substantial toll on the mental health of the population through its associated symptoms and treatment side effects, and impact on daily life, social roles and work. According to the OECD’s SPHeP model, Luxembourg is expected to have higher depression rates because of cancer, at an additional age-standardised rate of 10 cases per 100 000 population per year.

**Figure 15. Cancer has a fairly similar impact on life expectancy in Luxembourg as in the EU**

Projected reduction in years of life expectancy due to cancer (2023-50 average)



Note: The EU average is unweighted.

Source: OECD (2024b), *Tackling the Impact of Cancer on Health, the Economy and Society*, <https://doi.org/10.1787/85e7c3ba-en>.

### Luxembourg has implemented several initiatives to enhance the continuum of care and quality of life of cancer patients

Luxembourg has implemented various initiatives to enhance the quality of life of individuals diagnosed with cancer and those with a history of the disease. These comprehensive care options reflect Luxembourg's commitment to supporting cancer patients and their families throughout the continuum of care. According to the 2023 OECD Policy Survey on Cancer Care Performance, initiatives aiming to improve quality of life for cancer patients in Luxembourg include guidance on diet, exercise and healthy lifestyles, along with programmes designed to upskill and reskill workers, facilitating their return to work. Other support initiatives include the option to return to work gradually for therapeutic reasons, along with additional support for caregivers, such as provisions for taking leave from work.

The ongoing RELIANCE Breast Cancer pilot study, led by Luxembourg Institute of Health and funded by National Cancer Plan 2020-24, aligns with these national initiatives by investigating risk factors for breast cancer survivors and identifying the challenges and enablers for returning to work after diagnosis (Luxembourg Institute of Health, 2024a). This research aims to offer valuable insights into the return-to-work process following a breast cancer diagnosis and to enhance support for more effective patient pathways in real-life settings.

### Luxembourg is among the eight EU countries with a right to be forgotten

Luxembourg is one of eight EU countries that uphold a "right to be forgotten" policy, which safeguards cancer patients by ensuring that their health data cannot influence access to financial products like life and health insurance, mortgages or loans after a defined period following treatment completion. Implemented in 2020, Luxembourg's policy stipulates that individuals are not required to disclose their cancer diagnosis 10 years after treatment ends for those over 18, and 5 years for those under 18. The right to be forgotten is expected to enhance survivors' financial stability and employment prospects, contributing to improved quality of life by alleviating some of the long-term socio-economic impacts of cancer.

### Luxembourg has a comprehensive approach to palliative care

Luxembourg's legal framework ensures that palliative care is accessible to any individual facing an advanced or terminal illness, irrespective of the underlying cause. Eligibility for palliative care is determined on submission of a declaration by the treating physician to the Social Security Medical Board. Once approved, the patient is entitled to receive palliative care for 35 days, which may be renewable for one or more additional periods of 35 days based on the properly supported decision of the attending physician.

Luxembourg has made significant investments in training programmes and development of both hospital-based and home-based palliative care services. The Hospital Centre of the North

provides annual training for multidisciplinary medical trainees, and manages a palliative care unit with six beds. Currently, three hospitals offer dedicated palliative care units, staffed by interdisciplinary teams including pain management specialists, palliative nurses, psychologists, social workers, physiotherapists and spiritual care staff. In addition to hospital-based care, two hospitals provide both hospital-based and mobile care units, delivering services directly to patients' homes. Three organisations specialise in providing home-based palliative care. Patients receiving care at home are entitled to long-term care insurance

benefits, including counselling, assistive products, night nursing services and occupational therapy.

While paediatric palliative care is not yet available in Luxembourg, a national end-of-life plan and palliative care plan presented in 2023 aim to address this gap (Ministry of Health and Social Security, 2023b). For example, the plans include the establishment of paediatric palliative care programmes and a respite home for children to receive rest and recovery care. In addition, they propose training all paediatric nurses in the country in palliative care.

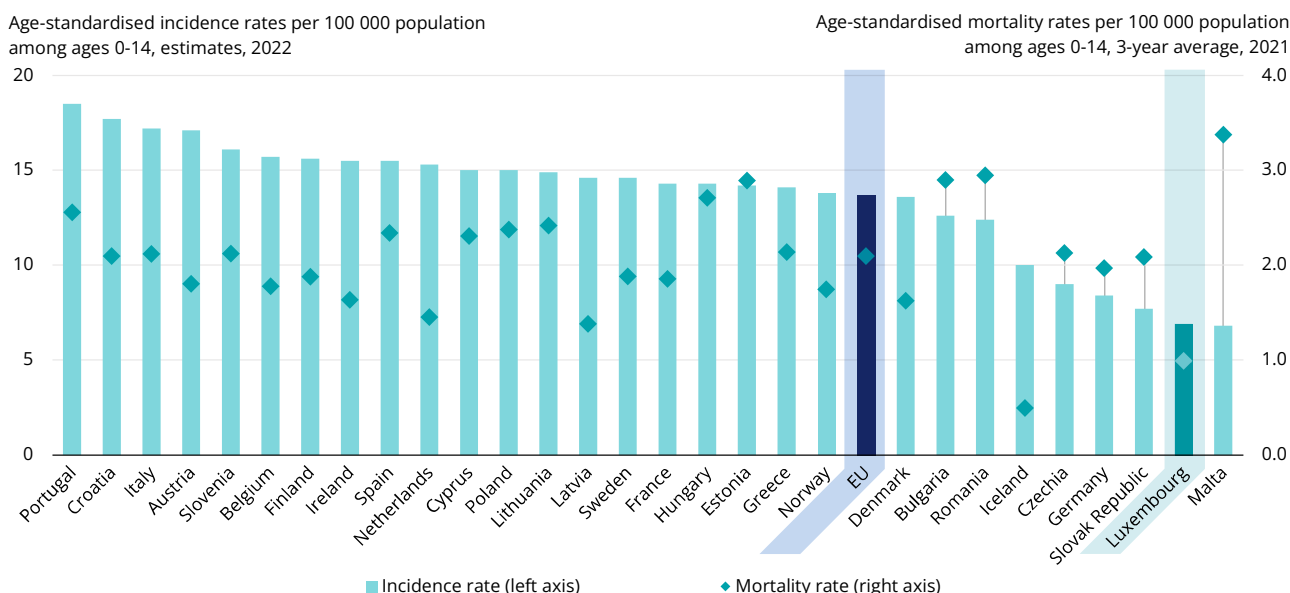
# 6. Spotlight on paediatric cancer

According to ECIS, it is estimated that in Luxembourg 7 children and adolescents up to age 15 were diagnosed with cancer in 2022. Incidence rates for ages 0-14 were estimated at 7 per 100 000 children, half the EU average of 14 (Figure 16). According to the National Cancer Registry (NCR), during the period 2014-22, 147 new cases of cancer were diagnosed in children under the age of 15 (Couffignal et al., 2023). This

translated into an age-standardised incidence rate of 16 per 100 000 population. Over 9 years, the most common cancer types were brain, central and nervous system (31%), leukaemia (27%) and lymphoma (11%).

According to Eurostat, Luxembourg has lower mortality rates than in the EU, with a 3-year average mortality rate of 1 per 100 000 children as compared to 2.1 in the EU.

**Figure 16. Estimated cancer incidence rates among children in Luxembourg are half that of the EU average**



Notes: 2022 estimates are based on incidence trends from previous years, and may differ from observed rates in more recent years. "All sites" includes all cancer sites except non-melanoma skin cancer. Sources: European Cancer Information System (ECIS) for cancer incidence. From <https://ecis.jrc.ec.europa.eu>, accessed on 10 March 2024. © European Union, 2024. Eurostat Database for cancer mortality.

The European Society of Paediatric Oncology (SIOPE)'s Organisation of Care & Research for Children with Cancer in Europe (OCEAN) Project identified that Luxembourg has one institution treating children and adolescents with cancer (SIOPE, 2024). In addition, Luxembourg has 5 out of 13 infrastructural and treatment modalities, including inpatient and outpatient chemotherapy, solid tumour and central nervous system surgery, and palliative care. Of 436 clinical trials enrolling children and young people in Europe between 2010 and 2022, Luxembourg did not have any oncology clinical trials available to children aged under 18.

As part of its first National Cancer Plan, Luxembourg established a national network

specifically for paediatric haematology and oncology services, integrated into existing paediatric healthcare frameworks. The National Paediatric Oncology-Haematology Service (SNOHP), located in the children's clinic of the Hospital Centre of Luxembourg, forms an integral part of this network and works closely with other European university onco-haematology centres. The Hospital has inpatient capacity of 2-4 beds, and treats 25-30 children per year, with care co-ordinated between paediatricians, paediatric oncologists and nurses specialising in paediatric palliative care. For treatment of specific paediatric cancers, Luxembourg has agreements with other nearby countries such as France, Germany and Belgium.

Axis 7 of Luxembourg's National Cancer Plan 2022-24 focuses on enhancing the quality and monitoring of paediatric cancer treatment through several key objectives. These include development of clinical pathways for paediatric cancers, enhancement of the SNOHP, introduction

of paediatric palliative care, ensuring access to education for young patients and facilitating the transition of care from paediatric to adult oncology services.

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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
Czechia	CZ	Greece	EL	Lithuania	LT	Portugal	PT		

# European Cancer Inequalities Registry

## Country Cancer Profile 2025

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 Thematic Working 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 quality of life.

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