

# Cancer Dashboard for Slovenia

Bardh Manxhuka, Thomas Hofmarcher, Urška Košir



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## Purpose

In 2023, the Swedish Institute for Health Economics (IHE) launched an international initiative with support from MSD, aiming to facilitate the exchange of best practices in cancer care across European countries. This initiative is called "*Cancer Dashboards in Europe*". It has its background in the launch of the Europe's Beating Cancer Plan and the question of how to translate political commitment into action. The objective is to create country-specific dashboard-style reports with a comprehensive and illustrative description of a selected set of key indicators in all areas of cancer care. These indicators benchmark the current status quo in a country against target values specified in national cancer plans, targets set by international organizations, or values of other countries. The reports also provide evidence-based recommendations on how to improve the current situation in a country.

This report is intended to complement existing national and international cancer reports developed by subject-matter experts. It offers a comprehensive overview that contextualizes key findings. It aims to reinforce the implementation of the national cancer strategy and to support Slovenian decision-making, prioritization, and the new DPOR.

## Contents

Foreword.....	3
Dashboard overview for Slovenia .....	4
High-level recommendations.....	5
Background .....	6
Governance.....	7
Economic burden of cancer .....	11
Prevention .....	13
Early detection.....	18
Diagnosis and treatment.....	22
Survivorship .....	28
References.....	31

**Prepared by IHE - The Swedish Institute for Health Economics**

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# Foreword

"Prevention is better than cure", says a Slovenian proverb. I see this report, which is compiled as a comparative overview of the success of cancer prevention and treatment in Slovenia by individual indicators, not only as an interesting insight into the data, but - and perhaps especially - as a tool for planning activities that would improve outcomes in our country.

Public awareness, especially in the prevention and early detection of cancer, has an important impact on the indicators of success factors. Personal experience - one's own or that of a loved one - greatly changes an individual's perspective. Last year, I myself went down this path: during a regular examination, a significantly elevated PSA factor in the blood was detected. After a series of tests, prostate cancer was confirmed, and a few months later I underwent surgery. My story is just one of about 1,600 a year in Slovenia, and it has a happy ending. Since the disease was detected early enough, no consequences are expected. For many men, however, it does not end so easily. About 460 of them die each year, mostly because prostate cancer was discovered too late and began to spread elsewhere.

The diagnosis of cancer does not pass without shock, even if it is immediately clear that the detection was early enough. Many are reluctant to talk about it. It was my carefully considered and very personal decision to speak publicly about this diagnosis. Because I think that the power of being heard also comes with responsibility for how you use that power. If by telling my story I encouraged a few men to test PSA, I had already done something.

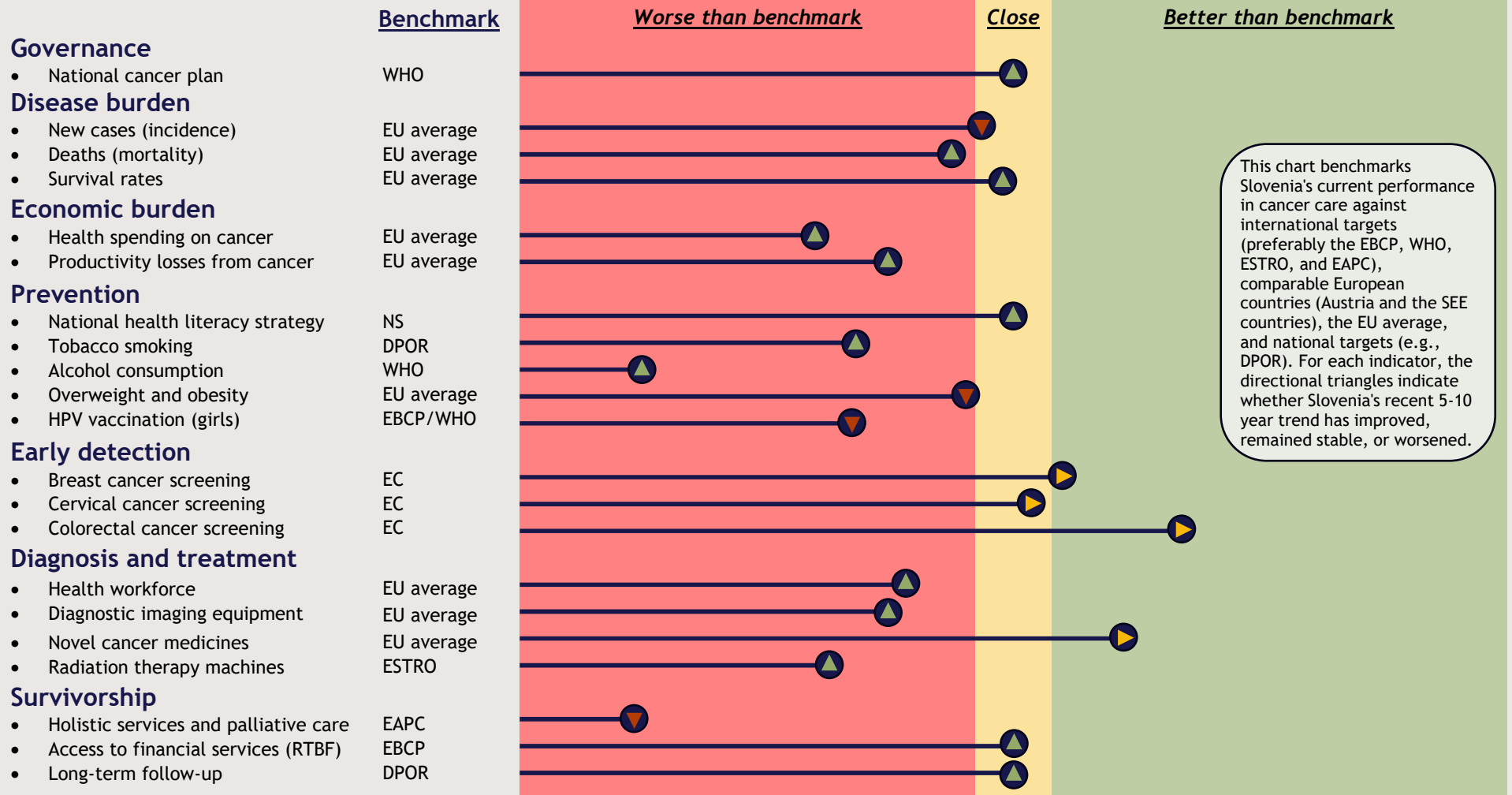
I see this report in a similar manner: as a public encouragement to try pushing the indicators in Slovenia as deep into the green field as possible. Some depend on health policy, others on the actions and responsiveness of each of us. We have the power to influence both, directly or indirectly. Let us use this power.

*Dr. Aleš Musar*

First Gentleman of Slovenia

# Dashboard overview Slovenia

## Comparative Performance: Slovenia vs. Benchmark



This chart benchmarks Slovenia's current performance in cancer care against international targets (preferably the EBCP, WHO, ESTRO, and EAPC), comparable European countries (Austria and the SEE countries), the EU average, and national targets (e.g., DPOR). For each indicator, the directional triangles indicate whether Slovenia's recent 5-10 year trend has improved, remained stable, or worsened.

**Legend:** ▲ Positive development, ▶ Stable development, ▼ Negative development

**Abbreviations:** WHO = World Health Organization, EU = European Union, NS = National strategy, DPOR = Slovenian National Cancer Strategy, HPV = human papillomavirus, EBCP = Europe's Beating Cancer Plan, EC = European Commission, ESTRO = European Society for Radiotherapy and Oncology, RTBF = "Right to be forgotten", EAPC = European Association for Palliative Care, SEE = Southeast European.

**Notes:** All indicators for which benchmarking is applicable are defined in % or per capita terms; see the main text for a detailed description and the Appendix for the exact definition used.

# High-level recommendations

## Governance

- ✓ Ensure that cancer remains a national priority and accelerate the development of comprehensive cancer centers that reinforce multidisciplinary excellence across the country.
- ✓ Strengthen data infrastructure and enable value-based healthcare through implementation and scaling of patient-reported outcome measures (PROMs) as part of routine oncological care in all cancer centers.
- ✓ Ensure the next DPOR cycle is aligned with national initiatives (National Health Literacy Strategy; healthcare digitalization via ZDigZ and the 2022-2027 strategy) and EU-level developments (EHDS; EU regulatory developments for advanced therapy medicinal products and next generation of medicine).

## Funding

- ✓ Direct future cancer spending toward the highest-impact interventions across the care pathway, applying a societal perspective that accounts for productivity gains from improved survival.
- ✓ Regularly evaluate the marginal impact of cancer spending and reassess resource allocations to avoid diminishing returns and sustain long-term progress in cancer care.

## Prevention

- ✓ Address health literacy at both individual and system levels by embedding its principles into patient pathways to make navigation clear, including access to patient navigators/care coordination where needed.
- ✓ Intensify public awareness and education campaigns on the risks of smoking and benefits of cessation, guided by the WHO MPOWER framework and the upcoming, revised EU tobacco tax directive (2011/64/EU).
- ✓ Scale up awareness campaigns about the links between alcohol consumption and cancer risk, and develop targeted prevention and early-intervention programs for high-risk groups, particularly young people and working-age adults
- ✓ Complement existing food and nutrition policies with fiscal measures such as taxation on unhealthy or ultra-processed foods to reduce consumption and support healthier population diets.
- ✓ Develop year-round HPV vaccination campaigns that place focus on cancer prevention and address stigma.

## Early detection

- ✓ Maintain high participation in DORA, ZORA and Svit through targeted outreach and continued monitoring of regional- and age-related disparities.
- ✓ Revise the existing programs with the recommendations by the Council of the EU for using HPV testing and expanding age ranges, and implement PETER and LUKA, for prostate and lung screening, respectively.

## Diagnosis and treatment

- ✓ Expand and sustain the oncology workforce by recruiting and training additional specialist physicians in line with the strategy about human resources in healthcare, ensuring more equity between regions as well.
- ✓ Ensure timely and equitable access to new diagnostic imaging equipment and services, as well as to novel medicines.
- ✓ Plan strategic investments in advanced modalities, such as proton or carbon-ion therapy, to future-proof Slovenia's radiation therapy services and secure access to cutting-edge treatment options for patients.

## Survivorship

- ✓ Integrate PROMs into routine care for follow up care, demonstrate clear clinical value for healthcare professionals, and provide meaningful feedback to patients throughout survivorship.
- ✓ Expand access to palliative care and holistic rehabilitation programs to strengthen recovery, quality of life, and community reintegration for people living with cancer.
- ✓ Establish age-appropriate AYA care and develop and implement clear clinical guidelines and decision-making aids for fertility preservation, particularly for women of childbearing age diagnosed with cancer.

# Background

## IHE Cancer Dashboards

Cancer has received growing political attention across the European Union (EU) in recent years. The launch of Europe's Beating Cancer Plan (2021) by the European Commission reflected a strengthened commitment to addressing the burden of cancer in a more systematic and coordinated way (1). Cancer is the leading cause of death in Slovenia and across the EU, responsible for more than one in five deaths (2). Substantial inequalities in cancer care persist, both between and within EU countries. A key challenge lies in translating international and national initiatives into action: while the policy landscape is rich in ambition, it often lacks funding and clear and practical tools to support implementation, guide prioritization, and monitor progress at national level.

To help bridge the gap between policy plans and action, the Swedish Institute for Health Economics (IHE) has developed a series of national Cancer Dashboards since 2023 for countries such as Austria, Denmark, Greece, Italy, Lithuania, Poland, and Portugal. These dashboards provide an intuitive and structured overview of how countries perform in cancer care. By combining data, benchmarking, and evidence-based recommendations, they offer policymakers and stakeholders actionable insights, highlighting where progress is being made, where efforts must accelerate, and where strategic investment is required. Ultimately, each dashboard serves as a navigation tool to support the planning, implementation, and evaluation of effective, equitable, and outcome-oriented cancer control.

While some dashboards cover specific cancer types, others take a broader view of cancer care as a whole. Building on this work, the current dashboard turns the focus to cancer care in Slovenia.

## Structure of the dashboard and choice of indicators

This report begins with an overview of key Slovenian and European governance frameworks relevant to cancer, including Slovenia's National Cancer Control Plan (DPOR) and Europe's Beating Cancer Plan (EBCP). It then provides an analysis of the disease and economic burden of cancer, highlighting the impact of the disease on patients, the healthcare system, and society at large. These contextual elements set the stage for understanding the urgency of national-level action. The report then mostly follows the cancer care pathway, structured around the four pillars of the EBCP: namely prevention, early detection, diagnosis and treatment, and survivorship. Together, the dashboard presents a comprehensive view of the current status of cancer management in Slovenia.

The dashboard is structured as follows:

- **Governance** (1 indicator): National cancer strategy
- **Disease burden** (3 indicators): New cases (incidence), deaths (mortality), survival rates
- **Economic burden** (2 indicators): Health spending on cancer care, productivity losses from cancer
- **Prevention** (5 indicators): National health literacy strategy, tobacco smoking, alcohol consumption, obesity and overweight, human papillomavirus (HPV) vaccination
- **Early detection** (3 indicators): Screening for breast, cervical, and colorectal cancer
- **Diagnosis and treatment** (4 indicators): Health workforce, diagnostic imaging equipment, novel cancer medicines, radiation therapy machines
- **Survivorship** (3 indicators): Access to holistic services and palliative care, access to financial services ("Right to be forgotten"), long-term-follow up

The starting point for the selection of indicators was the original list of indicators assembled by IHE for the European Cancer Pulse of the European Cancer Organisation (3). The final set of indicators was confirmed based on discussions with local experts and stakeholders (see "Acknowledgement"), MSD Slovenia, and local data availability.

For each indicator across the cancer care pathway, this report provides:

- A general explanation of its relevance, and how it relates to the DPOR and the EBCP
- A description of the current situation in Slovenia, with regional and/or international care and policy comparisons, and best practice examples
- Recommendations for improvement and alignment with national and international targets

Data sources for all indicators are summarized in the Appendix. All data were drawn from publicly available sources.

Benchmarking is conducted internationally against Bulgaria, Croatia, Romania (the Southeast European (SSE) countries), as well as Austria and the EU average whenever data are available.

# Governance

In 2017, the World Health Assembly (the decision-making body of the World Health Organization, WHO) adopted resolution WHA70.12 on cancer prevention and control (4). It calls on governments to commit themselves to accelerating action against cancer. Specifically, it urges governments to develop and implement national cancer control plans that are inclusive of all age groups, that have adequate resources, monitoring and accountability, and that seek synergies and cost-efficiencies with other health interventions.

## ***Slovenian National Cancer Control Program (DPOR) 2022-2026***

Slovenia's cancer control efforts are guided by the DPOR, a key strategic document managed by the Oncology Institute of Ljubljana (OIL). The current version of DPOR for the period 2022-2026 builds on the foundations laid by its preceding plans and strategies (5). It integrates health policy, medical expertise, and the involvement of civil society, to address cancer challenges comprehensively, and focuses on the following strategic areas:

1. **Primary prevention:** Emphasizes lifestyle changes to reduce cancer risk, including reducing tobacco and alcohol use, promoting healthy diets, and minimizing exposure to pollutants (5).
2. **Secondary prevention:** Strengthen national screening programs for early detection of breast, cervical, and colorectal cancer (5). Since 2023, there are also ongoing plans for new screening programs for lung and prostate cancer, and revision of the cervical screening with HPV testing (6).
3. **Diagnosis and treatment:** Details strategies for the diagnosis and treatment of both common and rare cancers, incorporating the latest treatment approaches and diagnostic technologies (5).
4. **Comprehensive rehabilitation and palliative care:** Emphasizes the need to improve the quality of life of cancer patients by strengthening the approaches of holistic rehabilitation and palliative care (5).
5. **Research and education of health care providers:** Combines research in oncology with educational programs for health care professionals, emphasizing advancements in cancer care and treatments (5).

The upcoming 2027 revision of the DPOR is being informed by nationally collected data, expert consultations, and input from patient representatives, ensuring a comprehensive, stakeholder-driven approach. Alongside the DPOR, several major initiatives promise to further shape the country's oncology landscape, including Slovenia's active participation in the EU Joint Action EUnetCCC, national strategy for digitalizing healthcare, and the strategy for human resources in healthcare passed in March 2026 (7). Together, these efforts position Slovenia to strengthen cancer prevention, diagnosis, treatment, and data-driven system improvement.



### **EUnetCCC**

Slovenia is a committed partner in the EBCP's flagship initiative to build a Europe-wide network of Comprehensive Cancer Centers (CCCs), an effort involving 163 partners across 31 countries and supported by €112 million over four years (8, 9). As part of the EUnetCCC Joint Action, coordinated by France's National Cancer Institute (INCa), Slovenia contributes directly to shaping an inclusive, high-quality cancer care ecosystem that aims to ensure that 90% of eligible patients in Europe can access excellence in cancer care by 2030. Slovenia plays a leading role through NIJZ, which co-coordinates the project, and engages a strong national consortium: including the Oncology Institute Ljubljana (OIL), University of Ljubljana, University Medical Centre Ljubljana, University Clinic Golnik, University of Maribor, and University Medical Centre Maribor. Together, these institutions support efforts to align quality standards, strengthen capacity for sustainable improvements, promote cross-border collaboration and ultimately create a consortium-based Slovenian Comprehensive Cancer Center.



### **Slovenia's path to digitalization of healthcare**

Slovenia's strong engagement in European cancer initiatives is reinforced by its national strategy for digitalizing healthcare, which is set to significantly enhance oncological care. Through the new "Zakon o digitalizaciji zdravstva" following the 2022-2027 Digital Health Strategy, Slovenia is building a unified, modern digital ecosystem where all patient data are securely accessible in a national electronic health record (eKarton) and central electronic health record (CeZZ) (10). This transformation will streamline diagnosis and treatment, reduce administrative burden for clinicians, and improve continuity of care across all institutions. By enabling real-time data exchange, strengthening data security, expanding telehealth, enabling better research, and ensuring comprehensive system-wide data Slovenia is creating the digital foundations needed for high-quality, coordinated cancer pathways integration. Supported by more than €100 million in investments, these reforms directly support Slovenia's role improving its capacity for evidence-based comprehensive cancer care.



# Disease burden of cancer

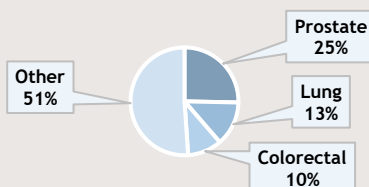
## Incidence and mortality

In 2022, a total of 13,536 new cancer cases (7,412 in men and 6,124 in women) were recorded in Slovenia in the Slovenian Cancer Registry (SLORA) (13). The most common diagnoses were prostate cancer in men and breast cancer in women (25% each), followed by lung cancer (13% in men; 11% in women) and colorectal cancer (10% in men; 9% in women). In the same year, cancer caused 6,310 deaths (3,532 in men 2,778 in women) (13). The leading cause of cancer-related death was prostate cancer in men (19%) and breast cancer in women (16%), followed by lung cancer (15% in men and women) and colorectal cancer (11% in men; 14% in women).

Slovenia faces a high cancer burden in the European context. In 2022, there were an estimated 651 new cases and 324 deaths per 100,000 inhabitants, above the EU average (614 cases and 289 deaths per 100,000) (14).

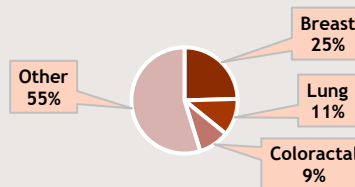
Age-standardized cancer incidence rates (ASR, European standard) increased in both sexes between 2000 and 2022 in Slovenia, from 446 to 475 cases per 100,000 inhabitants in men and from 307 to 365 per 100,000 in women (13). Conversely, age-standardized mortality rates (ASR, European standard) declined in both sexes over the same period, from 294 to 208 deaths per 100,000 in men and from 150 to 125 per 100,000 in women (13).

**Cancer incidence among men in Slovenia in 2022**  
Number of new cases: 7,412



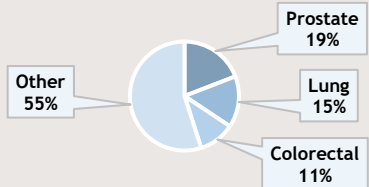
Source: SLORA

**Cancer incidence among women in Slovenia in 2022**  
Number of new cases: 6,124



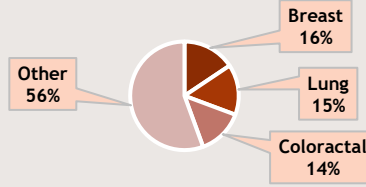
Source: SLORA

**Cancer mortality among men in Slovenia in 2022**  
Number of deaths: 3,532



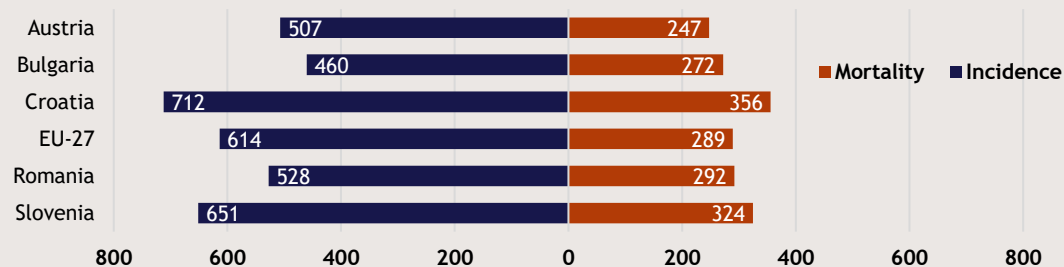
Source: SLORA

**Cancer mortality among women in Slovenia in 2022**  
Number of deaths: 2,778



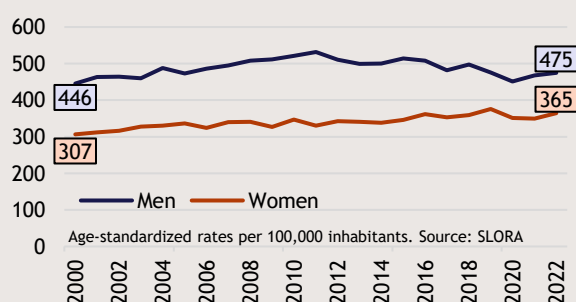
Source: SLORA

**International comparison of cancer incidence and mortality per 100,000 inhabitants in 2022, both sexes**



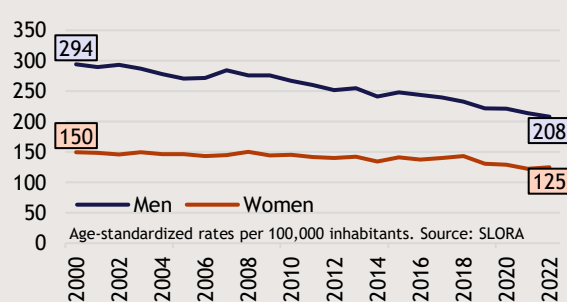
Source: ECIS

**Changes in cancer incidence (ASR) in Slovenia over time, by sex**



Age-standardized rates per 100,000 inhabitants. Source: SLORA

**Changes in cancer mortality (ARS) in Slovenia over time, by sex**

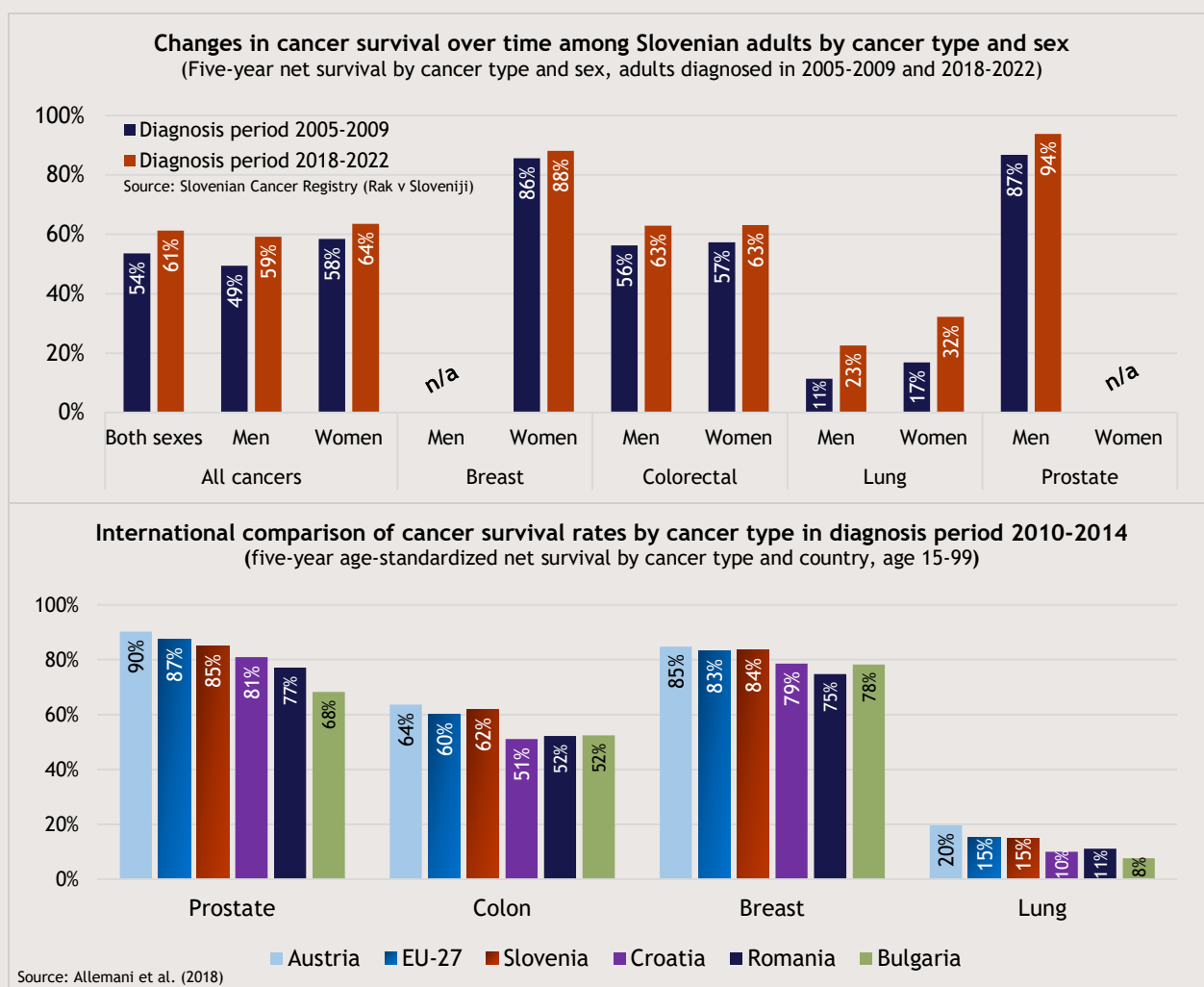


Age-standardized rates per 100,000 inhabitants. Source: SLORA

## Survival

Cancer survival in Slovenia has improved steadily over the past two decades. According to the Slovenian Cancer Registry (Rak v Sloveniji 2022), the five-year net survival for all cancers combined (excluding non-melanoma skin cancer) reached 61% for patients diagnosed in 2018-2022 (15), compared with 54% in 2005-2009 (16). Survival continues to be higher in women (64%) than in men (59%) (15). Among the most commonly diagnosed cancers in Slovenia, five-year net survival reached 94% for prostate cancer in men and 88% for breast cancer in women, while survival for colorectal cancer was 63% in both men and women, and for lung cancer 23% in men and 32% in women (15). Survival has improved across all major cancer types, with the largest relative gains seen in lung cancer, where women have surpassed 30%. The DPOR 2022-2026 aims to improve the five-year net survival for all cancers combined by 3% for patients diagnosed in 2022-2026, compared to the 2017-2021 period (60.4%) (5, 17).

International comparisons of cancer survival are limited and largely outdated. The most recent data, from the CONCORD-3 study for the diagnosis period 2010-2014, shows that Slovenia's survival rates were broadly in line with EU averages across major cancer types and highest among the SEE countries (18).



## Recommendations

- Reduce the current four-year reporting lag in SLORA data by publishing cancer statistics (incidence, mortality, and survival) on a timelier basis, enabling faster monitoring of epidemiology and more responsive policy action.
- Establish routine registry reporting of TNM stage group (Stage I-IV) at diagnosis for solid tumors to strengthen international comparability, beyond the current simplified stage presentation (localized/regional/distant).
- Enable value-based healthcare and implement patient-reported outcome measures (PROMs) as part of routine oncological care to strengthen patient-centered pathways and support outcomes-based planning.

# Economic burden of cancer

In Slovenia, the overall economic burden of cancer was estimated at roughly €6 billion in 2018, corresponding to €298 per capita (19). Most of this burden was attributable to lost productivity among working-age patients (49%), followed by healthcare expenditure (38%) and informal care (13%).

## The overall economic burden of cancer consists of:



### Healthcare expenditure (direct costs):

- Resources of the healthcare system (medical equipment, staff, medicines, etc.) funded both by public and private sources



### Costs of lost productivity (indirect costs):

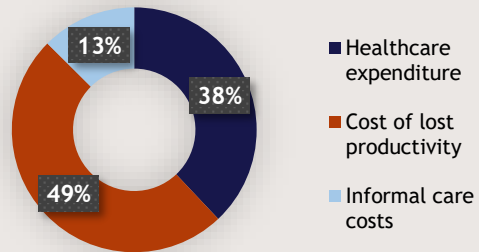
- Productivity losses from absence due to sickness, permanent incapacity/disability, and premature mortality of working-age patients



### Informal care costs:

- Value of the time forgone by relatives and friends to provide unpaid care

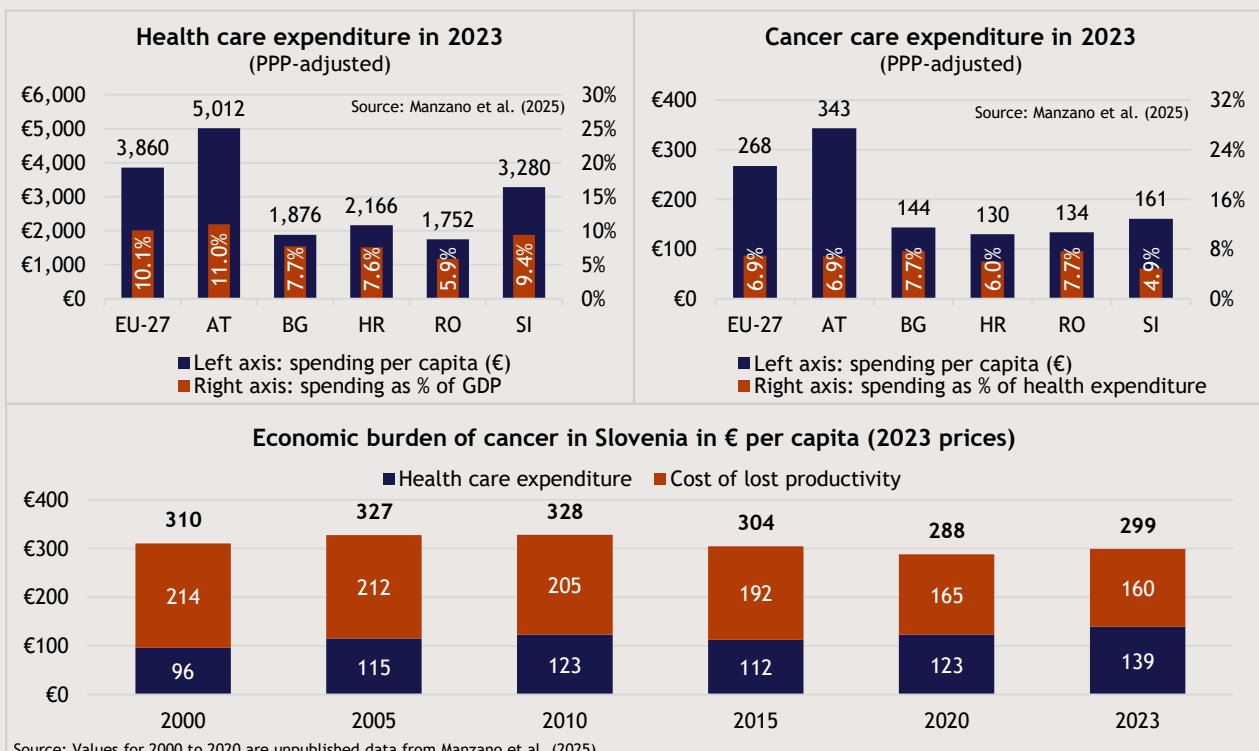
## Composition of the economic burden of cancer in Slovenia in 2018



Source: Hofmarcher et al. (2020)

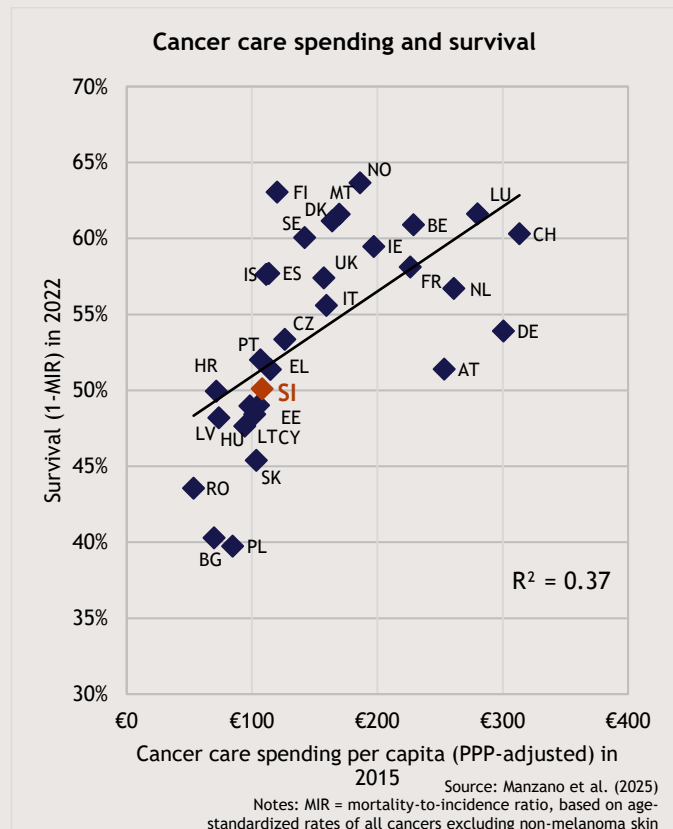
The latest available official statistics on Slovenia's cancer care expenditure are reported in the DPOR 2022-2026. Based on 2020 reimbursement data from the Health Insurance Institute of Slovenia (ZZZS), this amounted to about €219 million for reported cancer-related services (5). This includes about €20 million for organized screening (€1 million for ZORA; €12 million for DORA; €7 million for Svit) and about €199 million in treatment-related expenditure (€121 million for inpatient cancer treatment; €16 million for outpatient radiotherapy; €62 million for outpatient systemic oncology treatment) (5). However, these figures reflect only public expenditure by the ZZZS and might slightly underestimate total cancer care expenditure, as they do not capture private out-of-pocket expenditure/non-ZZZS financing, or cancer-related care outside reported services (e.g., diagnostic work-up prior to confirmed diagnosis).

The most recent estimates show that the economic burden of cancer (excluding informal care costs) decreased moderately from €310 to €299 per capita between 2000 and 2023 (in 2023 prices) (20). Healthcare spending on cancer was estimated to equal 4.9% of the total healthcare expenditure in 2023, corresponding to €139 per capita (€161 after adjusting for purchasing power parity, PPP), which was the highest among the SEE countries but remained below Austria (€343) and the EU average (€268). Between 2000 and 2023, healthcare spending on cancer was estimated to have increased by approximately 45%. By contrast, the cost of lost productivity declined by around 25% over the same period, from €214 to €160 (€185 after adjusting for PPP in 2023) (20). This downward trend, despite the continued rise in the annual number of new cancer cases (see "Disease burden of cancer") reflects the improving survival rates in Slovenia and underlines the economic value of investments in effective cancer care.



## Health spending on cancer care & survival rates

The ultimate aim of health spending on cancer care is to improve patient outcomes, both in terms of survival and quality of life. The figure to the right offers a crude way of exploring the link between cancer care spending and patient outcomes across EU countries; see Manzano et al. (2025) for clarification on methodology (20). While this association does not prove causality, it is consistent with previous evidence showing that European countries investing more in cancer care tend to achieve better survival outcomes (21, 22). The upward-sloping trend line suggests that countries with higher cancer spending tend to achieve higher survival in cancer, although the benefits per additional Euro spent seem to diminish beyond a certain level. In contrast, countries with low spending generally report lower survival (mostly in Central and Eastern Europe). Slovenia lies in the lower-middle range of the distribution, both in terms of cancer care spending and survival, suggesting it performs roughly in line with what its investment level would predict. This reinforces a key insight: underinvestment may limit survival gains, while additional resources, if used effectively, could support improved outcomes.



However, the scattered pattern in the graph also underlines that spending alone is not enough. Patient outcomes are shaped by how resources are allocated and used across the entire care pathway. Strategic prioritization, such as early detection, timely diagnosis, monitoring of patient-reported outcome measures (PROMs) and equitable access to effective treatment, is essential to translating spending into tangible survival benefits. Going forward, further gains in survival will likely depend on the broad adoption and expansion of effective technologies, many of which come at a higher cost. Health systems must therefore ensure that investments in cancer care are used in a cost-effective and outcome-oriented way. This means not only evaluating the value of new interventions but also identifying and addressing inefficiencies along the entire care pathway.

## Recommendations

- Building on DPOR 2022-2026 reporting of ZZS expenditure, establish routine annual reporting of cancer care expenditure, ideally extended to breakdowns by cancer type, to enable accurate cost-of-illness analyses and support effective prioritization and value assessment in cancer care.
- Direct future cancer spending toward the highest-impact interventions across the care pathway, applying a societal perspective that accounts for productivity gains from improved survival (see “OREH” described in a later section as an example).
- Regularly evaluate the marginal impact of cancer spending and reassess resource allocations to avoid diminishing returns and sustain long-term progress in cancer care.

# Prevention

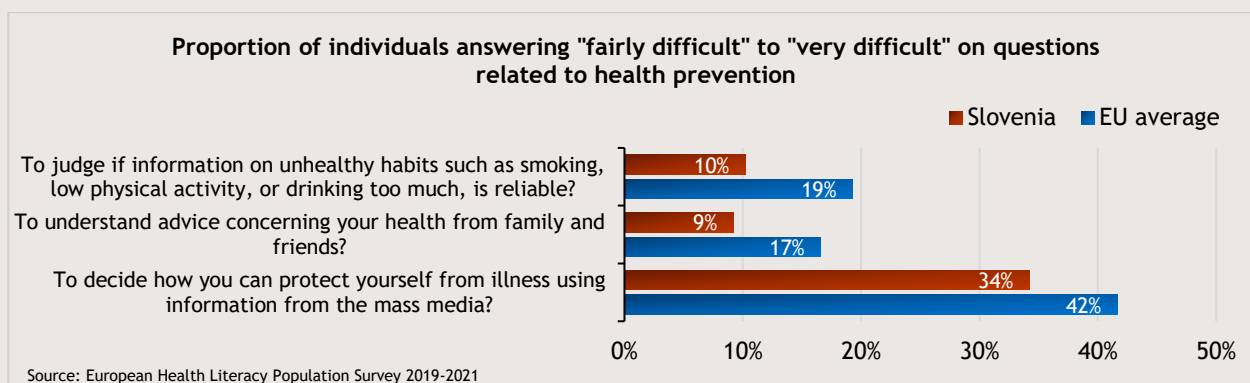
## National health literacy strategy

### Background

- The World Health Organization (WHO) estimates that up to 50% of new cancer cases are preventable by addressing modifiable risk factors (11). Thus, increasing citizen's awareness of major risk factors - such as smoking, obesity, alcohol consumption, UV radiation from the sun - through targeted and comprehensive national strategies is a key step in achieving beneficial behavioral and lifestyle changes. The European Code Against Cancer (5th Edition) includes 14 actions that individual citizens can take to help prevent cancer (23).
- At the political level, the EBCP includes the aim of making at least 80% of the population aware of the European Code Against Cancer by 2025 (1). Slovenia has implemented an education program for the adult population based on the 12 recommendations of the previous code (and plans to introduce the 5th edition in February 2026), and the DPOR 2022-2026 aims to continue raising awareness and promoting a healthy lifestyle and choices (5).
- Health literacy is an important social determinant of health and encompasses people's abilities and motivation to find, assess, understand, and apply health-related information for their own care (24). The concept has gained increasing recognition and funding in recent years (25). Research across Europe has shown that up to 50% of adult population reports poor health literacy (26). Lower levels of health literacy often follow the social gradient and socio-economic status and have been associated with poorer comprehension of medical and health information, lower compliance with screening, poorer treatment adherence, and overall health (27, 28).

### Current status in Slovenia

- The European Health Literacy Population Survey 2019-2021 (HLS19) measures health literacy in the general population in Slovenia and 12 other EU countries (study sample of around 1,000-3,600 people per country) (29). According to this survey, the health literacy level in Slovenia is higher than the EU average, however, national results showed that Slovenians particularly struggled with navigational health literacy.



- Slovenia has made decisive progress on health literacy by grounding its efforts in robust evidence and translating findings into a comprehensive national strategy. The first national Health Literacy Survey (HLS-SI19), conducted in 2020 on a representative sample of 3,360 adults, revealed substantial challenges: nearly half of adults demonstrated limited general health literacy, two-thirds struggled with navigating the health system, and significant gaps emerged in communicative, digital, and vaccination literacy (30).
- These insights catalyzed the development of the National Health Literacy Strategy 2025-2035, which positions health literacy as a core determinant of system performance and patient outcomes (31). The strategy adopts a whole-of-society approach - improving access to reliable information, strengthening digital competencies, enhancing communication by healthcare professionals, and embedding organizational health literacy across institutions. This structured, system-level response has enabled Slovenia to move from measurement to meaningful action, ensuring that health literacy becomes an integral part of high-quality, equitable, and patient-centered cancer care.

### Recommendations

- Ensure complete and timely implementation of the National Health Literacy Strategy, starting in 2025.
- Address health literacy at both individual and system levels, embedding principles into patient pathways, particularly for cancers such as prostate and breast, so that navigation through the health system is clear.
- Design digital health services and solutions in line with health literacy principles and integrate health literacy PROMs into the national eKarton to monitor, measure, and reduce disparities in health literacy and outcomes.

# Prevention

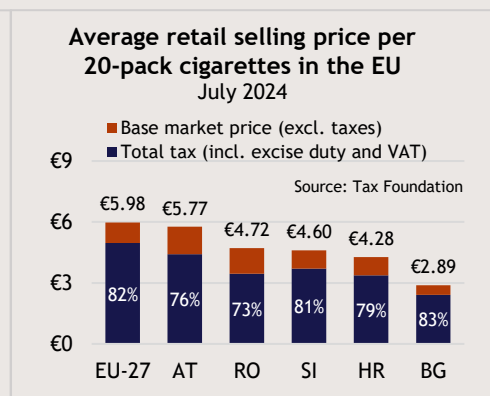
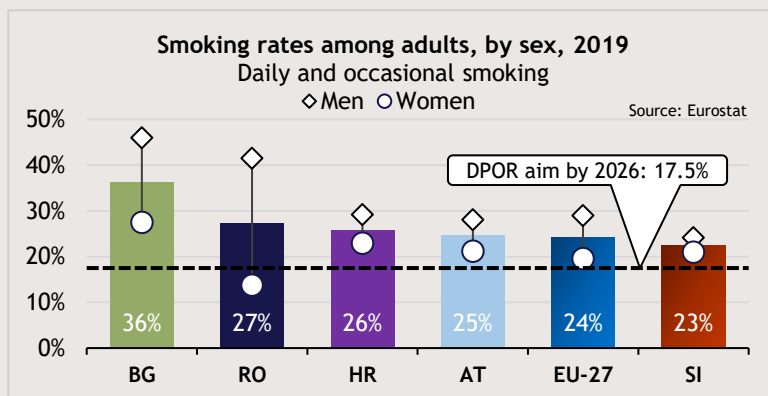
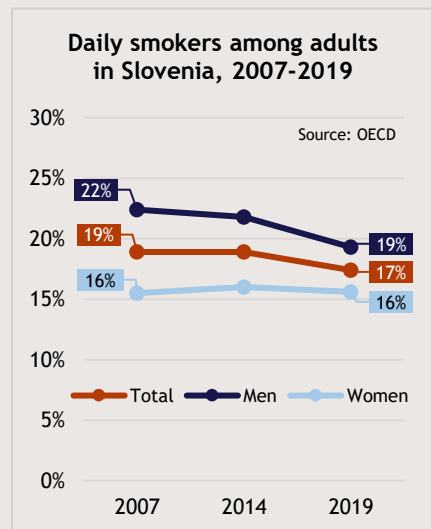
## Tobacco smoking

### Background

- Tobacco smoking is a major risk factor for developing various cancer types (32), and it has been linked to cancers at 12 different sites (33). Around 80% of all lung cancer cases are linked to cigarette smoking (34).
- The WHO suggests that implementing tobacco control measures can prevent one in five annual cancer cases (35). In 2008, the WHO introduced the MPOWER framework - a package of six evidence-based, cost-effective, high-impact policy measures to help countries reduce the demand for tobacco (36). As part of this framework, best practice for tobacco taxation is defined as a total tax share of at least 75% of the retail price (36, 37). Only one EU country (the Netherlands) had implemented all six MPOWER measures at the best-practice level in 2025 (38, 39).
- The EBCP aims to help create a “Tobacco-Free Generation” where less than 5% of the population uses tobacco by 2040, compared to around 25% today (1).
- Slovenia implemented its initial Restriction of the Use of Tobacco Products Act in 1996 (40). The current legislation, adopted in March 2017, includes a range of control measures related to smoking areas, tobacco advertising, packaging, and labeling. The DPOR 2022-2026 aims to decrease (i) the share of smokers aged 15 years and over from 23% in 2019 to 17.5% in 2026 and (ii) the share of adolescents aged 15 years who smoke tobacco at least once a week from 9% in 2018 to 7% in 2026 (5).

### Current status in Slovenia

- Slovenia shows a positive trend among daily smokers with a modest decline from 19% in 2007 to 17% in 2019, as reported by the OECD (41). This decrease has been driven by men.
- According to the latest available Eurostat data from 2019, 23% of Slovenian adults were daily or occasional smokers, slightly below the EU average of 24% and lowest among the SEE countries (42). NIJZ data from 2021 suggests that smoking prevalence remained at 23% (43).
- Smoking among 15-year-olds in Slovenia has fallen markedly, with the share who smoked at least once over the last 30 days declining from 22% in 2014 to 14% in 2022 in both boys and girls, a larger reduction than the EU average and Austria and the largest among SEE countries (44). Early initiation also declined substantially, with the share who first smoked by age 13 falling from 17% to about 8% over the same period (45). A growing challenge, however, is the rise of new nicotine products: in 2022, 7% of 13-year-olds and 19% of 15-17-year-olds reported using e-cigarettes, heated tobacco, or nicotine pouches (46).
- As of July 2024, Slovenia had the 8th lowest average retail selling price of cigarettes in the EU at €4.60 per 20-pack (47). Taxes accounted for 81% of the price, meeting the WHO MPOWER best-practice standard for tobacco taxation but remaining slightly below the EU average (82%) and Bulgaria (83%).



### Recommendations

- Intensify public awareness and education campaigns on the risks of smoking and benefits of cessation, guided by the WHO MPOWER framework.
- Sustain and strengthen tobacco taxation, progressively aligning rates with peer countries, and ensure implementation of the upcoming, revised EU tobacco tax directive (2011/64/EU) (48) to protect public health across all tobacco and nicotine products.

# Prevention

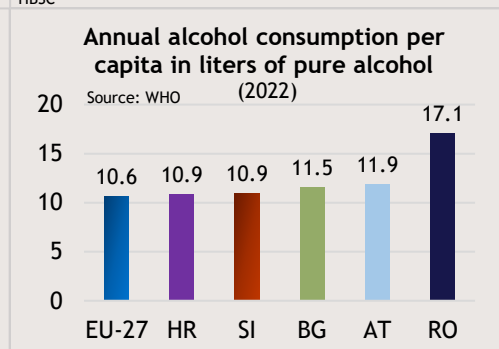
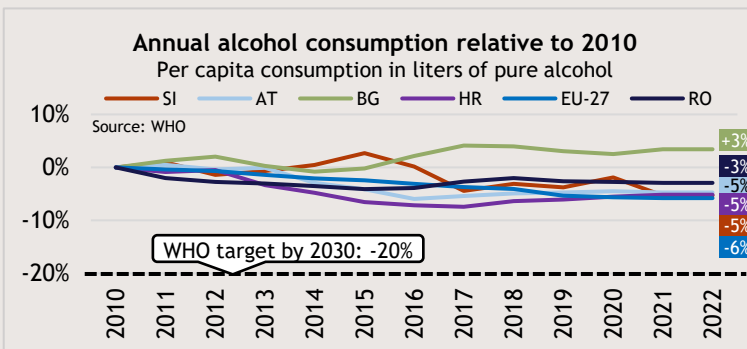
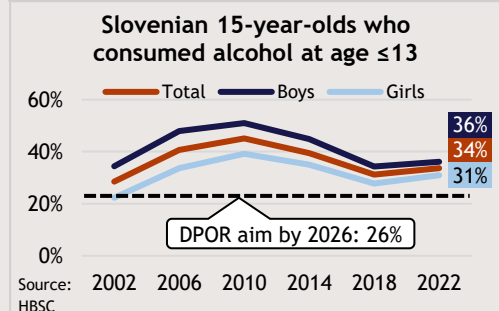
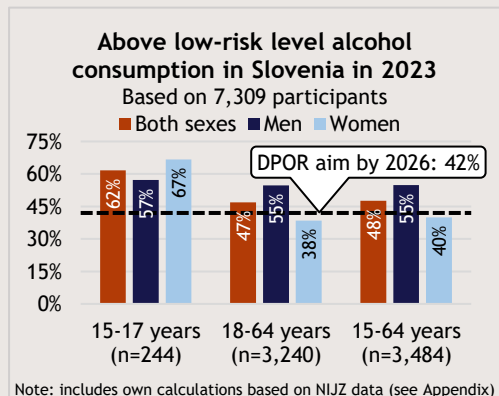
## Alcohol consumption

### Background

- Alcohol consumption is a major risk factor for noncommunicable diseases (NCD) and caused 2.6 million deaths globally in 2019, including 4.3% of all cancer-related deaths. Its use is linked to several cancers, including breast, liver, colorectal, oral cavity, pharyngeal, laryngeal, and esophageal cancers (49).
- The WHO Global Alcohol Action Plan 2022-2030 sets a global target of at least a 20% relative reduction in the harmful use of alcohol by 2030, compared to 2010 (50). This exceeds the earlier voluntary 10% target set under the NCD Global Monitoring Framework (51). Progress toward these targets is measured through total alcohol per capita consumption, defined as the estimated volume of recorded and unrecorded alcohol consumed per person aged 15 and older in a calendar year, expressed in liters of pure alcohol (50).
- The EBCP supports the global target of a 10% reduction in harmful alcohol use by 2025 and commits to measures such as health warnings and nutrition labelling on alcoholic beverage packaging, stricter monitoring of online alcohol marketing, and support for evidence-based interventions in health care and the workplace (1).
- The DPOR 2022-2026 aims to (i) reduce the share of individuals aged 15-64 who drink above low-risk levels from 45% in 2018 to 42% by 2026, and (ii) lower the share of 15-year-olds who consumed alcohol by age 13 or earlier from 31% in 2018 to 26% by 2026 (5). In addition, it commits to implementing biennial alcohol-reduction plans, co-funding interventions to reduce risky and harmful drinking, and expanding the SOPA model (“Skupaj za odgovoren odnos do pitja alkohola”) across primary care and health-promotion centers (5).

### Current status in Slovenia

- Data from 2023 show that while the share of abstainers is gradually increasing, hazardous and harmful alcohol use remains widespread, especially among men and young adults (52). Own calculations of published survey data suggest that 48% of people aged 15-64 years consumed alcohol above low-risk levels in 2023.
- According to the Health Behaviour in School-aged Children (HBSC) survey, early alcohol initiation remains common in Slovenia: in 2022, 34% of 15-year-olds reported having consumed alcohol at age 13 or younger (36% of boys, 31% of girls) (45).
- According to 2022 WHO data, annual alcohol consumption in Slovenia was 10.9 liters of pure alcohol per capita, above the EU average (10.6 liters) (53). Slovenia has reduced its per capita consumption by 5% relative to 2010 but has not yet met the WHO target of a 20% reduction by 2030 (53). To achieve this, Slovenia would need to reduce its per capita consumption to 9.2 liters.
- Slovenia’s 2025-2026 Alcohol Reduction Program outlines a comprehensive, WHO-aligned strategy to curb harmful alcohol use (54), and promotes the European Code Against Cancer, which also supports the reduction of alcohol consumption (23).



### Recommendations

- Scale up awareness campaigns about the links between alcohol consumption and cancer risk.
- Strengthen prevention campaigns about the links between alcohol consumption and cancer risk.
- Develop targeted prevention and early-intervention programs for high-risk groups, particularly young people and working-age adults.

# Prevention

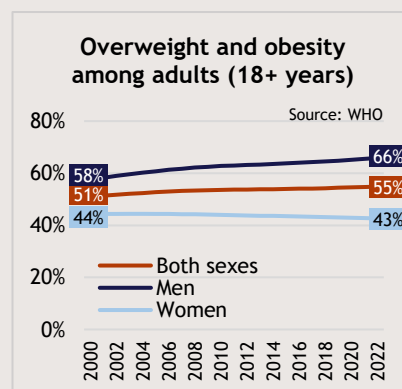
## Overweight and obesity

### Background

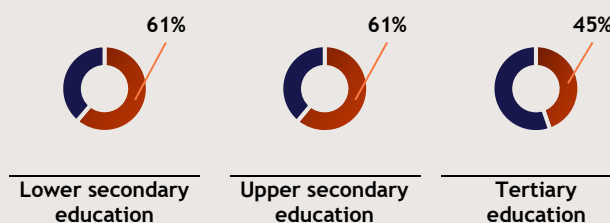
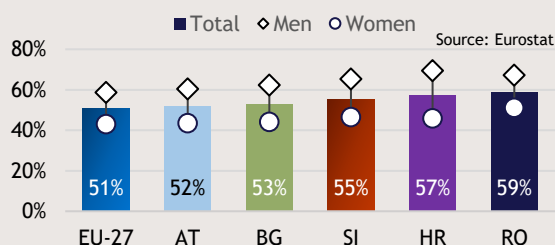
- Overweight (defined as body mass index (BMI) of  $\geq 25$ ) and obesity (BMI of  $\geq 30$ ) are medical conditions that increase the risk of multiple health problems, including cardiovascular disease, diabetes, and certain cancers (55). They have been linked to the development of 13 cancer types and are estimated to cause at least 200,000 new cancer cases each year in Europe (56).
- The EBCP aimed to evaluate the 2014-2020 EU Action Plan on Childhood Obesity and propose a follow-up, which is currently under review by the European Commission to define the next steps (1, 57). The European Economic and Social Committee (EESC) has called for the renewal of the action (58). The European Code Against Cancer recommends taking action to avoid or manage overweight and obesity, including limiting foods high in calories, sugar, fat and salt; limiting sugary drinks and choosing mostly water or unsweetened beverages; and limiting ultra-processed foods (23). In addition, the Code encourages being physically active in everyday life and following a healthy diet, while consistent with the “WHO acceleration plan to stop obesity” also emphasizing the role of fiscal policies and incentives to promote healthy lifestyle choices and reduce overweight and obesity (23, 59).
- The DPOR 2022-2026 recognizes overweight and obesity as key modifiable risk factors for cancer and refers to the National Program on Nutrition and Physical Activity for Health 2015-2025 (Dober tek, Slovenija), which sets explicit targets to reduce overweight and obesity by 10% among children and adolescents and by 5% among adults by 2025 (5).

### Current status in Slovenia

- Slovenia has seen a modest increase in overweight and obesity among adults (aged 18+ years), rising from 51% in 2000 to 55% in 2022 according to WHO data (60). This trend has been driven entirely by increases among men, while levels among women have remained stable: in 2022, overweight and obesity were substantially more prevalent in men than in women (66% vs. 43%) (60).
- According to Eurostat data, Slovenia (55%) had a higher prevalence of overweight and obesity in 2022 than the EU average (51%), Austria (52%), and Bulgaria (53%), but remained below Croatia (57%) and Romania (59%) (61). Marked socio-economic inequalities are evident: prevalence reached 61% among men and women with lower or upper secondary education, compared with 45% among those with tertiary education (61).
- Socio-economic status is also a key driver of overweight and obesity in younger populations; in 2022, prevalence ranged from 28% in adolescents from the least affluent families versus 17% in those from the most affluent (46).
- Given these trends, achieving the national target of returning obesity levels to their 2010 baseline will require intensified effort, but doing so could prevent more than 1,000 new cancer cases between now and 2050 (62).



**Overweight and obesity among adults (18+) in 2022:**  
International comparison and educational inequalities in Slovenia



### Recommendations

- Develop targeted programs that promote healthy lifestyles among disadvantaged groups, leveraging the National Health Literacy Strategy to improve understanding, motivation, and capacity for healthier choices.
- Prioritize interventions for young people and women from lower socio-economic backgrounds, where the prevalence of overweight and obesity poses the highest burden.
- Complement existing food and nutrition policies with fiscal measures such as taxation on unhealthy or ultra-processed foods to reduce consumption and support healthier population diets.

# Prevention

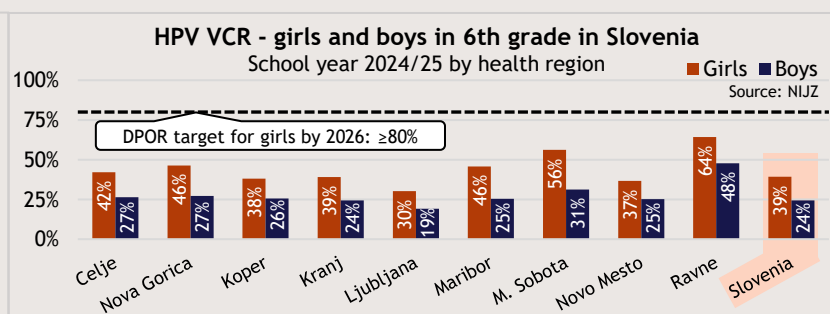
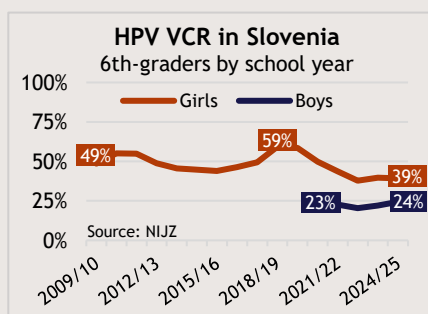
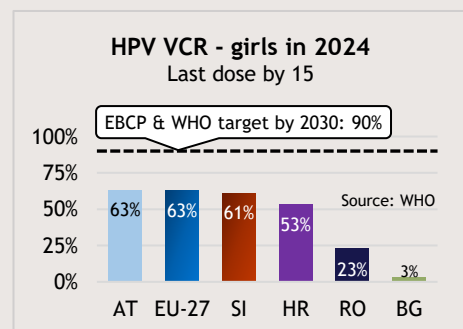
## Vaccination against human papillomavirus (HPV)

### Background

- HPV is a group of sexually transmitted viruses that causes around 2.5% of all cancers in women and men in Europe (63). HPV vaccines, first approved in the EU in 2006, have been found to be an effective and cost-effective way to prevent cervical cancer and other HPV-related cancers (63). According to the WHO, the best option is to vaccinate girls around age 9-14, just before they become sexually active (64). There is, however, value in vaccinating boys and older teenagers and young adults, at least up to the age of 26 because it can protect against a new infection or re-infection and block transmission to a new partner (63).
- As part of its global strategy to eliminate cervical cancer, the WHO calls on all countries to achieve a 90% HPV vaccination coverage rate (VCR; fully vaccinated) in girls by age 15 by 2030 (63). Reflecting the WHO's target, the EBCP aims to achieve a 90% HPV VCR in girls in the EU by 2030, and to significantly increase the VCR in boys by the same year, although no specific target has been set (1).
- Slovenia initiated its school-based HPV vaccination program in 2009, initially targeting 6th-grade girls (aged 11-12 years) with free vaccination through compulsory health insurance (OZZ) (65). Since 2021, the program has expanded to include 6th-grade boys, and it now also covers 1st-year and 3rd-year high school boys since the 2023/24 school year (65). Catch-up vaccination for latecomers (i.e., girls and boys who are not vaccinated during the intended school year) is provided free of charge under OZZ for girls and boys up to age 26 (65).
- The DPOR 2022-2026 aims to (i) attain a HPV VCR of at least 80% among girls aged 11-12 years by 2026 and (ii) promote and monitor HPV vaccination for boys (5).

### Current status in Slovenia

- According to WHO data, Slovenia's HPV VCR for girls turning 15 years in the reporting year reached 61% in 2024, slightly below the EU average of 63% but highest among SEE countries (66).
- NIJZ data highlight persistent challenges in Slovenia's school-based HPV vaccination program: the VCR among 6th-grade girls was increasing before COVID-19, but fell abruptly during the pandemic and has remained low since, with NIJZ pointing to increased parental vaccine hesitancy in the post-COVID years (67). In the 2024/25 school year, only 39% of girls and 24% of boys in 6th grade were fully vaccinated (68). Regional disparities are marked, with Ravne showing more than twice the uptake of Ljubljana in both girls (64% vs. 30%) and boys (48% vs. 19%) (68). Meanwhile, the VCR in girls turning 15 years during the same school year reached 58% (68), suggesting substantial catch-up vaccination occurs after the intended 6th-grade window, which may delay protection before sexual debut.
- Even with a relatively low HPV VCR of around 50% in Slovenia's first vaccine-targeted female birth cohorts (1998-2001), incidence of high-grade cervical precancerous lesions (CIN2+) at ages 20-24 was 42% lower than in the last non-targeted cohort (1994-1997), indicating substantial early population-level impact of HPV vaccination (69).



### Recommendations

- Develop sustained, year-round HPV vaccination campaigns rather than concentrating efforts only at the start of the school year.
- Strengthen health-literacy-informed communication by training healthcare providers to address concerns about vaccine safety and effectiveness in a clear, empathetic, and evidence-based way.
- Maintain a strong public-health narrative that positions HPV vaccination primarily as cancer prevention, not as protection against a sexually transmitted infection, and thus reduce stigma associated with it.
- Engage school principals, counsellors, and social workers as key partners to improve acceptance and uptake within school-based vaccination programs.

# Early detection

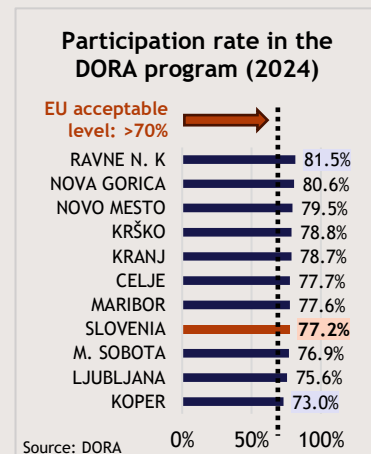
## Breast cancer screening

### Background

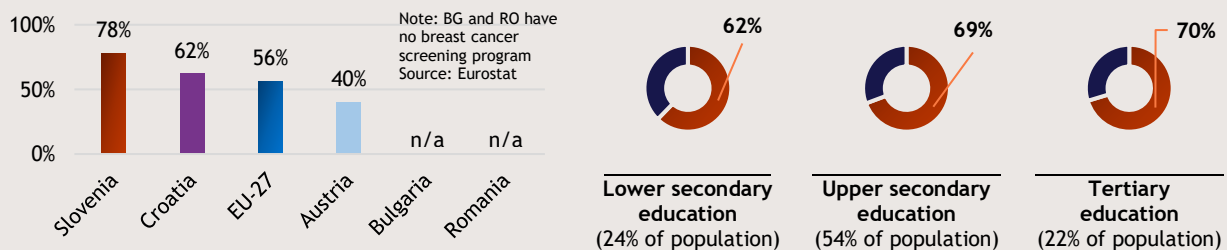
- The goal of breast cancer screening is to detect a tumor as early as possible when it is still small and amenable to curative treatment (70). In early disease stages, survival rates are highest and treatment costs lowest (71).
- The EBCP includes the aim to invite 90% of the target population in each country for breast cancer screening by 2025 (1). Quality guidelines by the European Commission state that a breast screening participation rate above 70% is acceptable (72). The updated screening recommendation by the Council of the EU from 2022 states that screening with mammography should be conducted in women aged 45-74 years (previously 50-69 years) (73).
- Slovenia introduced the Breast Cancer Screening Program (DORA) in 2008 and achieved full national coverage in 2018 (74). Over 15 years, approximately 400,000 Slovenian women have been invited for screening at least once, resulting in around 800,000 mammography exams conducted (74). Despite this, breast cancer remains the leading cause of cancer-related death among Slovenian women (16% of all cancer-related deaths in 2022) (13).
- The DPOR 2022-2026 aims to maintain a program participation rate above 75% across all regions (5). This is an integral part of the broader DORA Program Strategic Plan 2021-2025, which seeks to reduce breast cancer mortality by 25-30% among women in the target population in the next decade (74).

### Current status in Slovenia

- DORA is covered by the national health insurance since 2008 and targets women aged 50-69 years with residence and health insurance in Slovenia to be screened with mammography every 2 years (74, 75). The screening is conducted in 19 units, including 16 stationary and 3 mobile units, which jointly utilize 22 mammography machines. Eligible women receive personalized letters with pre-scheduled appointments, allowing for rescheduling. Additional reminders are sent after 4 weeks and every 2 years if necessary.
- There has been a stable trend in the participation rate of the DORA program, averaging 76% since it became operational in 2008 (76). In 2024, participation reached about 77% nationally, with regional variation ranging from 73% in Koper to 82% in Ravne na Koroškem (76). Nonetheless, the EU acceptable participation rate was surpassed across all regions.
- According to Eurostat program data, Slovenia had the fourth highest breast cancer screening participation rate in Europe in 2023 at 78%, behind only Denmark, Sweden, and Finland, but substantially higher than Austria (40%) and the EU average (56%) (77). However, self-reported Eurostat data from 2019 highlight persistent disparities: a lower education level is associated with lower participation in breast cancer screening among all EU countries, including Slovenia (62% participation rate in women with lower secondary education vs. 70% in women with tertiary education) (78). A similar trend is observed between income levels (79).
- In line with the latest recommendations by the Council of the EU, DORA & OIL launched a study in September 2025 to invite 2,150 women between 45-49 and 70-74 years to participate in screening (80). The aim is to obtain key screening quality indicators for planning of medical equipment, human resources, information system, spatial infrastructure and communication strategy for the expanded program.



**Breast cancer screening rate: 2023 program data & 2019 self-reported data (50-69 years, by education)**



### Recommendations

- Maintain DORA participation above 70% across all regions and screening centers and strive for rates above 75%.
- Expand the target age group of the screening program from 50-69 to 45-74 years in line with the latest recommendation by the Council of the EU.
- Implement targeted health literacy initiatives to further raise awareness and educate women, particularly those from marginalized groups, about the importance and benefits of breast cancer screening.

# Early detection

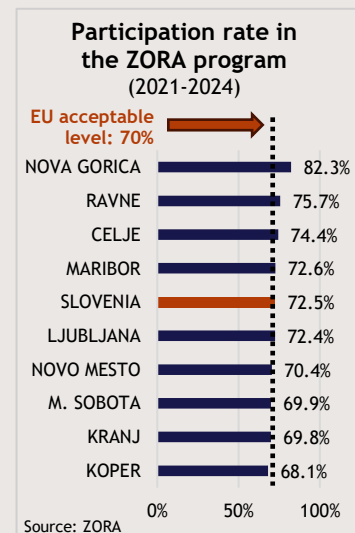
## Cervical cancer screening

### Background

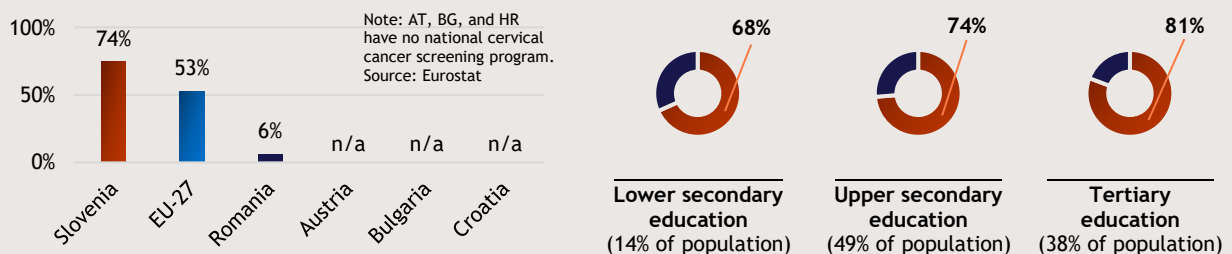
- The aim of cervical cancer screening is to detect a cancer before the onset of symptoms or even earlier in its pre-stages. In early disease stages, survival rates are highest and treatment costs lowest (81, 82). Cervical cancer screening used to be done with a Pap smear test every three years. The discovery of HPV as the cause of cervical cancer has led to the development of HPV tests as a screening method (64).
- The EBCP includes the aim to invite 90% of the target population in each country for cervical cancer screening by 2025 (1). Quality guidelines by the European Commission state that a cervical screening participation rate of 70% is acceptable (83). The updated screening recommendation by the Council of the EU from 2022 states that countries should use HPV tests and screen women aged 30-65 at an interval of five years or more (73).
- Slovenia implemented the National Cervical Cancer Screening Program (ZORA) in 2003 (84). The DPOR 2022-2026 set out to (i) maintain the program participation rate of 72-75% and (ii) to reduce disparities in screening rates between different age groups and regions, ensuring that participation rates not differ by more than 20 percentage points (5).

### Current status in Slovenia

- ZORA is covered by the national health insurance and currently targets women aged 20-64 years to be screened with a Pap smear every three years (84, 85). If the Pap test indicates abnormal findings, an HPV triage test is conducted followed by another Pap test within 6 months. On average, around 14,000 HPV triage tests are conducted annually in Slovenia, with a noticeable upward trend in this figure (84). Women within the target group can either initiate a screening visit themselves every three years or be invited by their gynecologist. The ZORA coordination center sends invitations to women in the target group if no cytology test has been recorded in the last three years.
- Between 2021-2024, the ZORA program achieved a nationwide participation rate of about 73% (85). The participation trend in the program has remained stable around 70% in the last two decades, and showed a good recovery despite an initial drop during the COVID-19 pandemic (85, 86). However, variations are observed by region and age group: six out of nine health regions surpassed the 70% target value with participation ranging from 68% in Koper to 82% in Nova Gorica and from 59% in the 60-64 age group to 81% in those aged 30-34 (85).
- Slovenia had the third highest cervical cancer screening participation rate in Europe in 2023 at 74%, behind only Sweden and Czechia (77). Lower education is associated with lower screening participation according to self-reported data (68% in women with lower secondary education vs. 81% in those with tertiary education in 2019) (87).
- In line with the updated screening recommendation by the Council of the EU from 2022, ZORA is carefully planning the transition to the primary HPV testing.



**Cervical cancer screening rate: 2023 program data & 2019 self-reported data (20-69 years, by education)**



### Recommendations

- Transition to HPV test as the primary screening method with an interval of five years. It is imperative that campaigns for change are co-designed with the Slovenian women and risks and benefits adequately communicated to the broad public.
- Ensure ZORA participation reaches and maintains at least 70% across all regions and age-groups through targeted outreach and strive for the national target range of 72-75%.
- Consider introducing HPV self-sampling for women who do not attend the ZORA program or do not have a registered gynecologist.

# Early detection

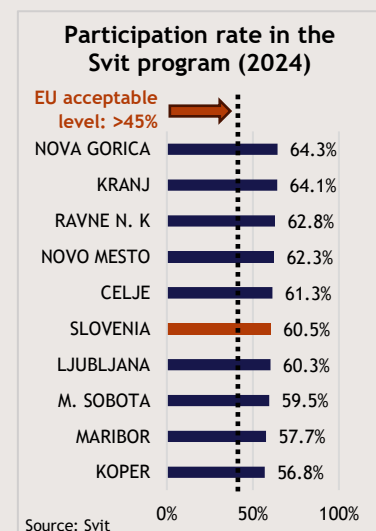
## Colorectal cancer screening

### Background

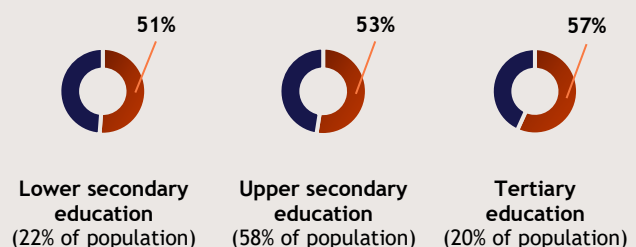
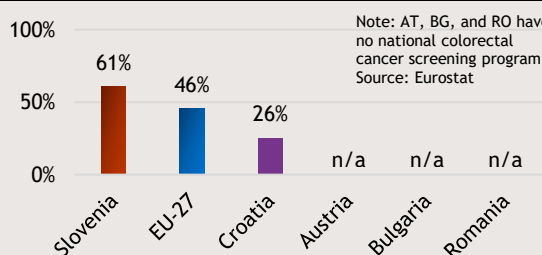
- Colorectal cancer is to a large extent curable if diagnosed early and if appropriate treatment is provided (88). Treatment costs are also lowest in early stages of the disease (82, 89). There are multiple colorectal cancer screening methods, including stool-based tests (faecal immunochemical test, FIT; guaiac faecal occult blood test, gFOBT; multitarget stool DNA test), blood-based tests, and imaging-based tests (colonoscopy, computed tomography colonography, colon capsule, flexible sigmoidoscopy) (90).
- The EBCP includes the aim to invite 90% of the target population in each country for colorectal cancer screening by 2025 (1). The updated screening recommendation by the Council of the EU from 2022 confirmed the previous screening recommendation for colorectal cancer in all people aged 50-74 years, and it established FIT as the preferred triage test for referring individuals for follow-up colonoscopy (73). European quality guidelines note that the screening interval with FIT should not exceed three years, with an acceptable participation above 45% (91).
- Slovenia established the National Colorectal Cancer Screening Program (Svit) in 2009 to address late detection and high mortality rates associated with colorectal cancer (92). The DPOR 2022-2026 set out to achieve a program participation rate of 70% among the target population by 2026 (5).

### Current status in Slovenia

- The Svit program uses FIT to detect occult blood in the stool, sent out every two years to men and women aged 50-74 years with residency and health insurance in Slovenia (92). The program is covered by the national health insurance (75) and the return envelope is prepaid, thus entirely free for the individual to return the sample. If the test for occult blood in the stool is positive, the person is invited for a colonoscopy (92).
- From 1 January to 31 December 2024, the Svit program reached a nationwide participation rate of about 61% (93), substantially above the EU acceptable participation rate. There are marked disparities in screening by region and sex: program participation rates ranged from 57% in Koper to 64% in Nova Gorica, and the response rate (i.e., intention to participate) among men was only 59%, compared to 70% among women (93). This sex-based gap is in line with studies in other countries showing that men are generally less likely to participate in colorectal cancer screening programs (94-97). Nevertheless, the Svit program has seen a stable trend in the overall participation rate over the last 10 years at around 60% (98).
- Slovenia had the fourth highest colorectal cancer screening rate in Europe in 2023 at 61%, behind only Finland, the Netherlands, and Sweden, but notably higher than the EU average of 46% (77). As with other screening, lower education is associated with lower screening participation in Slovenia according to self-reported data in 2019 (51% in women with lower secondary education vs. 57% with tertiary education) (99).



**Colorectal cancer screening rate (men & women):**  
2023 program data & 2019 self-reported data (50-74, by education)



### Recommendations

- Continue targeted campaigns and outreach to close the remaining gap toward the national participation target of 70% for Svit.
- Monitor and address gender disparities in the Svit program. Continued identification of barriers and tailored support may be particularly beneficial for men.
- Consider targeted information campaigns and support for men and women from lower socioeconomic status and those with lower health literacy.



## The present & future of screening in Slovenia

Slovenia excels in population-based cancer screening, with well-established national programs that consistently achieve high participation rates. A strong culture of collaboration across public health institutions, primary care, and specialist services underpins the effectiveness and sustainability of these screening programs (see Figure below). In 2025, Slovenia has begun planning expansion of its population-based screenings with two new programs targeting prostate and lung cancer: PETER and LUKA, respectively (100). Both initiatives are being developed through research and pilot projects in close collaboration with IARC and Erasmus Medical Center in the Netherlands.

- **PETER - Prostate Cancer Screening Program (in early implementation)**

The PETER program is being prepared through the PRO-PETER research project, which aims to support the evidence-based introduction of an organized, population-based prostate cancer screening tailored to Slovenian men and the national health system. The pilot project includes randomly selected men aged 50-69 years, the age group in which screening is considered most effective. Participation is voluntary, free of charge, and safe. The screening test is a PSA blood test, followed by risk-adapted diagnostics and active surveillance. All services are delivered in accordance with European and international clinical guidelines.

- **LUKA - Lung Cancer Screening Program (in planning)**

The LUKA program is currently in the active planning phase and is designed as a risk-based screening initiative. Invitations will be targeted at individuals at increased risk of lung cancer, particularly long-term smokers (e.g. those with a smoking history of more than 20 years). Screening is expected to rely on low-dose CT scanning of the lungs, following international evidence and best practices for early lung cancer detection.

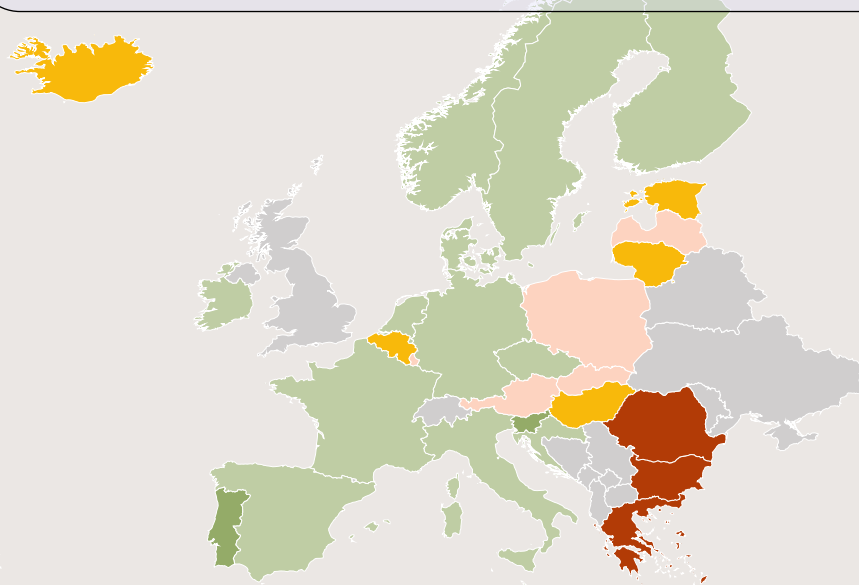
### Helicobacter pylori (H. pylori) Screening via TOGAS and EUROHELICAN Projects

The updated screening recommendation by the Council of the EU encourages Member States to explore “*search-and-treat*” strategies for *Helicobacter pylori* (H. pylori) infection as a preventive approach to gastric cancer (73). Slovenia has an intermediate incidence and mortality from gastric cancer, with trends showing a slow but steady decline (13). In this context, Slovenian experts are actively contributing to two EU-funded projects, including the **TOGAS and EUROHELICAN projects** (101, 102), which assess the feasibility, effectiveness, and public health value of population-based H. pylori screening and eradication strategies. Findings from these initiatives will inform future policy decisions on whether and how H. pylori screening could be integrated into Slovenia’s cancer prevention and early detection framework.

<b>Slovenia</b>	91.2 %
Portugal	90.8 %
Norway	88.6 %
Denmark	87.1 %
Czechia	87.1 %
France	86.6 %
Finland	86.1 %
Sweden	85.7 %
Netherlands	85.6 %
Ireland	84.3 %
Spain	84.0 %
Germany	83.6 %
<b>Croatia</b>	81.7 %
Malta	80.9 %
Italy	80.5 %
Estonia	79.8 %
Belgium	78.3 %
Iceland	76.8 %
Hungary	73.5 %
Lithuania	72.7 %
Poland	69.4 %
<b>Austria</b>	68.7 %
Luxembourg	68.5 %
Slovakia	68.0 %
Latvia	63.6 %
Cyprus	63.6 %
Greece	44.8 %
<b>Romania</b>	34.7 %
<b>Bulgaria</b>	26.1 %

### Slovenia ranks first in Europe on cancer screening policy alignment

The European Cancer Screening Policy Index (European Cancer Organisation, November 2024) benchmarks 29 European countries against the EU Council’s 2022 cancer screening recommendations using a composite (0-100%) score covering cancer screening policy, cancer screening registration, implementation characteristics of organized breast/cervical/colorectal screening, and progress on newly recommended areas (prostate, lung and gastric - e.g., recommendations/pilots). Slovenia’s overall score (91.2%) is the highest in the Index.



Adapted from the European Cancer Screening Policy Index  
November 2024

# Diagnosis and treatment

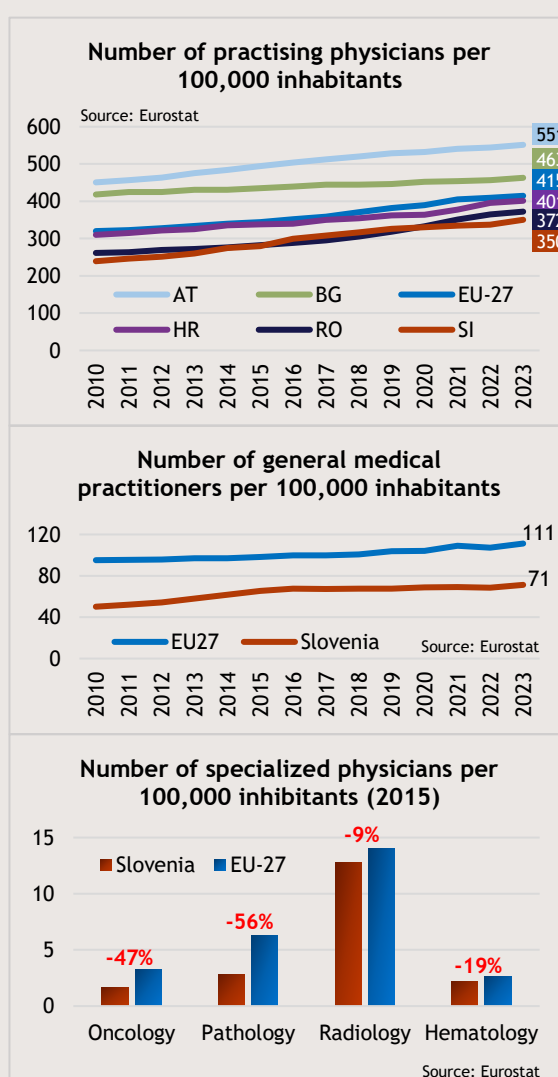
## Health workforce

### Background

- Modern cancer care is highly specialized and requires competence from different medical fields. This includes pathologists and diagnostic radiologists for the diagnosis of cancer, and surgeons, radiotherapists, medical oncologists, and hematologists for the treatment (103). General practitioners (GPs) play a key role in facilitating early diagnosis in primary care as they refer patients with signs and symptoms to the appropriate specialist (104). Nurses are involved throughout the care process, delivering patient education and treatment support (105).
- Slovenia's Ministry of Health acknowledges shortages of physicians, and highlight the fact that the gap between annual graduates and available specialization posts in Slovenia is increasing (106).
- Improving the staffing situation is one of the central aims of the DPOR 2022-2026, which involves creating new job positions in pathology and boosting the number of appropriate specialists to meet demand by 2026 (5). Another aim is to include the contents of oncology in the education of medical personnel from other areas of health care.

### Current status in Slovenia

- Slovenia had a comparatively low density of practicing physicians (of any specialty) in the EU in 2023, with 350 per 100,000 inhabitants, behind the EU average of 415 per 100,000 (107). In comparison, both Austria and Bulgaria exceed the EU average (551 and 463 per 100,000, respectively).
- Slovenia also recorded a low density of GPs of 71 per 100,000 inhabitants in 2023, also below the EU average of 111 per 100,000 (108). The lack of GPs in primary care might impede accessibility for patients with signs and symptoms of cancers, which could delay diagnosis.
- In addition, Slovenia had 510 practicing nurses per 100,000 in 2023, the highest density among the SEE countries but below both Austria and the EU average (1,030 and 703 per 100,000, respectively) (107).
- Eurostat data reveals that approximately 5% of Slovenian residents requiring medical examinations could not access them due to financial constraints, lengthy waiting lists, or geographical distances in 2024 (109). This figure ranked Slovenia ninth highest among EU countries, surpassing the EU average of 3%. Notably, the issue aligns with findings from the Slovenian Health Literacy Survey (HLS-SI19), indicating that 14% of respondents encounter challenges in securing adequate time with their physicians (30).
- International comparisons of specialized health workforce involved in the diagnosis and treatment of cancer are limited and largely outdated. The most recent Eurostat data from 2015, however, show that Slovenia faced substantial shortages of key specialized physicians when compared to the EU average, including oncologists, pathologists, radiologists, and hematologists, all of which are crucial for cancer care management (110).
- To address health workforce challenges, collaboration across healthcare levels is encouraged. Continued strengthening of nurse coordinators, expansion of tele-health services and increasing training capacities, that include palliation, survivorship and psychosocial functioning of patients is needed.



### Recommendations

- Expand and sustain the oncology workforce by recruiting and training additional specialist physicians in line with the strategy about human resources in healthcare, ensuring more equity between regions as well.
- Strengthen primary care capacity by introducing incentives and career-support measures that encourage medical graduates to pursue general practice, improving timely access to prevention, early diagnosis and essential examinations.

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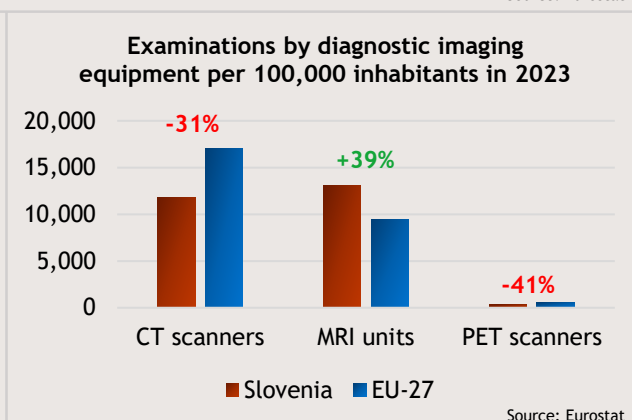
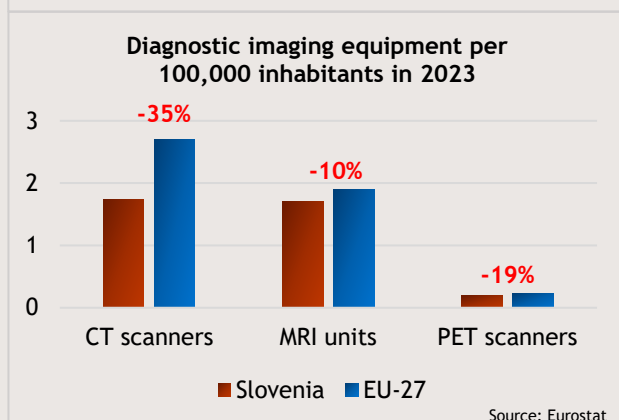
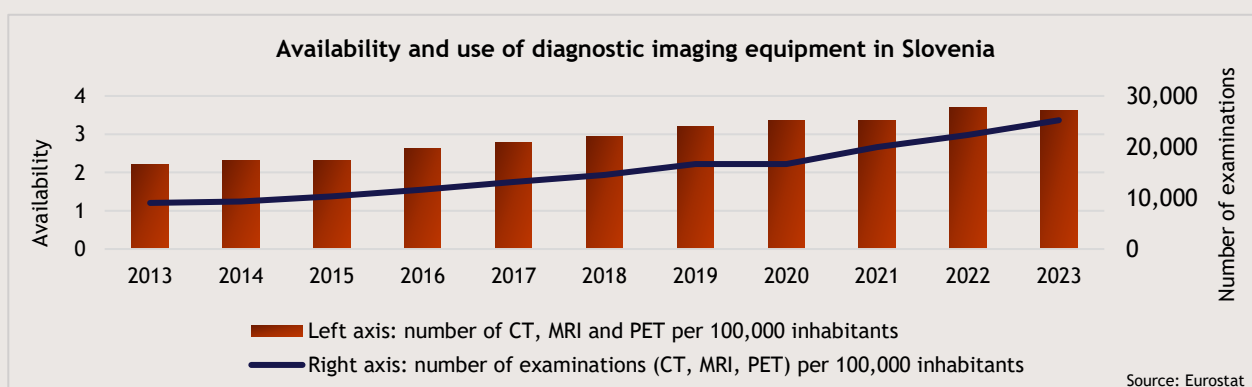
## Diagnostic imaging equipment

### Background

- Imaging equipment such as computed tomography (CT) scanners, magnetic resonance imaging (MRI) units, and positron emission tomography (PET) scanners are required to support physicians in all areas in the cancer care journey including diagnosis, treatment, and follow-up.
- The investment costs for scanners are high and they require specialized medical personnel to operate them, which naturally restricts their availability. General guidelines or benchmarks regarding the ideal number of scanners per inhabitant or cancer patient do not exist. An undersupply of scanning units may lead to access problems in terms of geographic proximity and/or waiting times.
- The DPOR 2022-2026 includes the aim of improving access to imaging diagnostics by 2024 under the general objective of ensuring equal quality and timely treatment for all cancer patients in Slovenia (5).

### Current status in Slovenia

- The availability of diagnostic imaging equipment (CT, MRI, PET) in Slovenia increased by about 64% from 2013 to 2023, from 2.2 to 3.6 per 100,000 inhabitants (111). The number of annual examinations also saw a substantial increase until 2019 (112), after which a flattening trend until 2021 might reflect the impact of Covid-19.
- The availability of diagnostic imaging equipment in Slovenia is below the EU average. In 2023, there were 35% fewer CT scanners, 10% fewer MRI units, and 19% fewer PET scanners per 100,000 inhabitants (111).
- When it comes to annual examinations, although Slovenia outperforms the EU average with 39% more MRI scans, it conducts 31% fewer CT scans and 41% fewer PET scans compared to the EU average (112).
- It is important to note that an increase in the availability of diagnostic imaging equipment does not alone guarantee improvements in the cancer care pathway. Without sufficient medical personnel to conduct the examinations and interpret the scans, the enhanced equipment alone will not mitigate potential diagnostic delays or improve treatment outcomes. Therefore, it is imperative to strengthen the specialist workforce alongside expanding the diagnostic infrastructure to ensure comprehensive and effective cancer care.



### Recommendations

- Prioritize improved geographic access to imaging diagnostic services and shorter waiting times for patients.
- Allocate additional resources to invest in new diagnostic imaging equipment, while at the same time ensuring that there is enough medical staff (imaging physicians, radiology technicians, and nurses) who can operate the new machines effectively.

# Diagnosis and treatment

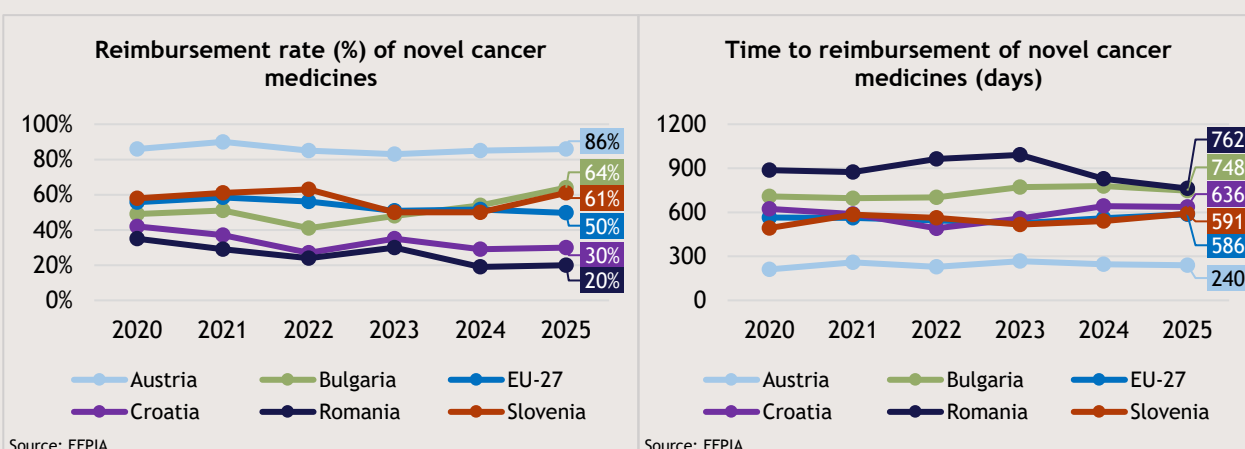
## Novel cancer medicines

### Background

- Novel cancer medicines introduced over the past decade have transformed treatment standards across many cancer types. Between 2015 and 2024, the European Medicines Agency (EMA) approved 116 new cancer medicines, reflecting a rapid pace of innovation in oncology (20). However, great differences remain in when and to what extent EU countries can ensure access to these new treatments to patients (113, 114).
- At the EU level, the Council of the EU and the European Parliament reached a political agreement in December 2025 on a major reform of EU pharmaceutical legislation, aiming to expand access and availability of medicines and speed up patient access by streamlining procedures and reducing evaluation times for new medicines, subject to formal adoption (115). In January 2025, the EU HTA Regulation (HTAR) entered into application for cancer medicines, introducing joint (cross-country) clinical assessments of the effectiveness of new treatments (116).
- DPOR 2022-2026 prioritizes timely reimbursement of EMA-approved therapies, improved pathways for compassionate use and early access, and the introduction of advanced treatments such as CAR-T cell therapy, supported by stable public financing and strengthened diagnostic capacity (5). However, while it defines time-bound implementation measures, it does not set explicit benchmarks for the availability, uptake, or timeliness of access to novel cancer medicines.

### Current status in Slovenia

- Slovenia's performance on both the availability and timeliness of reimbursement of novel cancer medicines is moderate, according to the European Federation of Pharmaceutical Industries and Associations (EFPIA) Patients W.A.I.T. Indicator Survey. As of January 2025, 61% of EMA-approved cancer medicines authorized between 2020 and 2023 had been reimbursed in Slovenia, above the EU average (50%) and most SEE countries, but below higher-performing countries such as Austria (86%) (114). This reflects a recent improvement in availability compared with earlier years. The mean time from EMA approval to reimbursement of these medicines was 591 days, slightly longer than the EU average (586 days), the shortest among SEE countries, but more than twice as long as in Austria (240 days) (114).
- However, a limitation of the EFPIA W.A.I.T. survey is its focus on medicines' first approved indication, excluding new uses that are added over time. This should be taken into account particularly for immune checkpoint inhibitors, some of which have gained over 20 EMA-approved indications since their initial approval (117).
- Complementary OECD evidence provides a granular view for selected high-clinical-benefit cancer medicines. In an analysis of 13 EMA-approved indications across 10 novel cancer medicines (ESMO-MCBS scores A and 5), Slovenia had reimbursed 69% of indications, above the EU average of 59% as of March 26, 2023 (118). The mean time from EMA approval to reimbursement was 293 days, substantially shorter than the EU average of 496 days (118). Notably, the analysis also found that pharmaceutical companies submitted reimbursement/coverage applications for these 13 indications in Slovenia on average 100 days after the EMA approval (118), meaning that part of the EMA-to-reimbursement duration reflects industry submission timing rather than payer assessment alone.



### Recommendations

- Establish routine monitoring of the real-world uptake of reimbursed oncology medicines across indications to identify potential disparities in patient access and complement first-indication health technology assessments.
- Align national reimbursement and early-access pathways with EU HTA joint clinical assessments and forthcoming pharmaceutical legislation.

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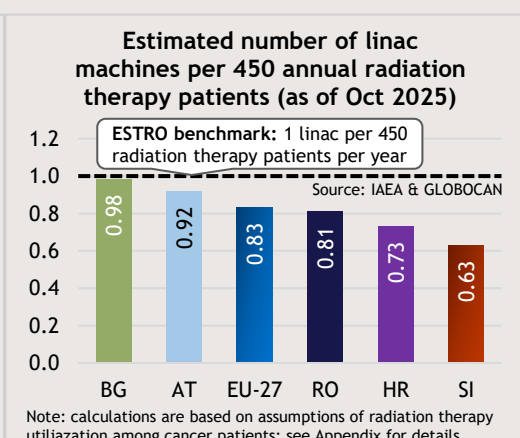
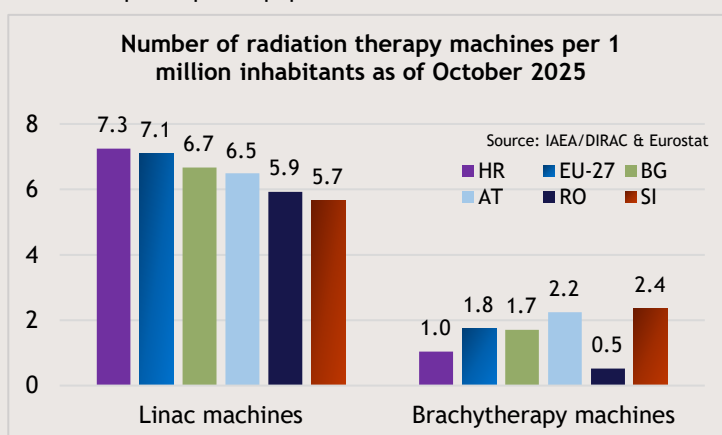
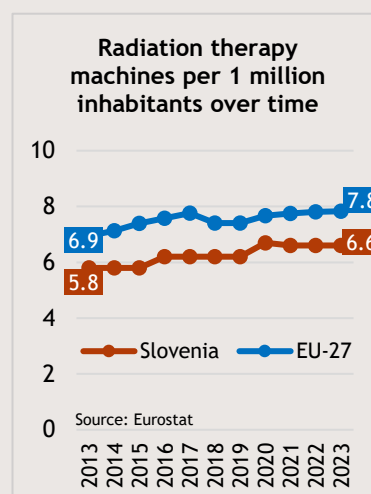
## Radiation therapy machines

### Background

- Radiation therapy plays a crucial role in the treatment of common cancer types. Approximately 50% of all cancer patients require radiation therapy at some point during their treatment (119). The effectiveness of radiation therapy in targeting and eliminating tumors significantly influences patients' survival rates and quality of life.
- Expanding access to radiation therapy requires both sufficient equipment and trained personnel to operate it. Therefore, it is essential to expand the health workforce and acquire new equipment strategically to ensure that radiation therapy is accessible to all patients in need (120).
- The European Society for Radiotherapy and Oncology (ESTRO), through the ESTRO-QUARTS capacity planning work, suggests a benchmark of one linear accelerator (linac) per 450 cancer patients requiring radiation therapy per year (121). This benchmark is widely referenced in radiation therapy capacity planning resources and is utilized as input by the International Atomic Energy Agency (IAEA) in regional capacity assessments (120).
- The DPOR 2022-2026 aims to ensure accessibility to all standard guidelines for radiation therapy under the general objective of ensuring equal quality and timely treatment for all cancer patients in Slovenia (5).

### Current status in Slovenia

- In 2023, Slovenia had 6.6 radiation therapy machines per 1 million inhabitants according to Eurostat data, up from 5.8 per 1 million in 2013, but still below the EU average of 7.8 per 1 million (122).
- As of October 2025, Slovenia's performance varies by type of radiation therapy equipment, according to data from the IAEA's Directory of Radiotherapy Centres (DIRAC) (123). Slovenia has 5.7 linac machines per 1 million inhabitants, below both the EU average (7.1 per 1 million) and Austria (6.5 per 1 million), and ranks lowest among the SEE countries (123, 124). Conversely, Slovenia outperforms all comparators in the availability of brachytherapy machines, with 2.4 per 1 million inhabitants (123, 124).
- Slovenia currently has 12 linac machines, corresponding to an estimated 0.6 linacs per 450 radiation therapy patients (121, 123, 125); see Appendix for clarification. To meet the ESTRO benchmark of one linac machine per 450 patients per year, Slovenia would require 12 linacs (i.e., 7 additional machines), corresponding to about 9 linacs per million inhabitants.
- In Maribor, one linac machine is currently out of operation. Adding it would significantly benefit Slovenia's small population (0.5 machines per million). Four new machines have been procured by the MoH in February 2026.
- Experts note that, although Slovenia operates fewer radiation therapy machines compared to many EU countries, existing capacity is optimized through extended working hours and double-shift operation. This organizational model ensures that current population needs are met and that access to radiation therapy is maintained despite lower per-capita equipment levels.



### Recommendations

- Increase the radiation therapy workforce by ensuring sufficient numbers of qualified specialists and radiotherapists to safely operate existing and future equipment.
- Plan strategic investments in advanced modalities, such as proton or carbon-ion therapy, to future-proof Slovenia's radiation therapy services and secure access to cutting-edge treatment options for patients.



## Enablers of innovation in cancer care: clinical genetics & research in Slovenia

Beyond core service delivery, Slovenia's cancer system is also supported by clinical cancer genetics and clinical research. These services strengthen prevention services, as well as treatment approaches, importantly connecting patients and providers to EU research networks and clinical trials, and enabling innovative, targeted and personalized approaches to cancer care.

### Clinical cancer genetics/Oncogenetics

Approximately 5-10% of all cancer cases are attributable to inherited pathogenic genetic variants, resulting in hereditary cancers (126). Identifying individuals and families at high genetic risk enables targeted prevention, personalized screening, early detection, and optimized treatment decisions.



#### The evolution

The development of molecular genetics has enabled the identification of genes associated with an increased risk of cancer. Since 2008, within a program of the ZZS, genetic testing has made it possible to identify, among patients with certain types of cancer, those who are most likely to have developed the disease due to an inherited genetic predisposition. Genetic testing also allows the identification of their healthy relatives, for whom personalized cancer surveillance and screening programs are adjusted according to their increased risk. At the Institute of Oncology Ljubljana, genetic screening and the identification of carriers of cancer predisposition genes associated with a high risk of cancer have been organized since 1999. Carriers of pathogenic variants may have up to a 15-fold higher risk of developing cancer compared to general population. Therefore, identifying individuals and families at increased risk is of great importance for the prevention and early detection of hereditary cancer. In addition to planning preventive measures for other cancers associated with the affected gene, patients may also benefit from personalized targeted therapies.

In 2008, an important agreement was reached with the Health Insurance Institute of Slovenia regarding the funding of genetic testing and counselling in the field of hereditary cancers. From 2008 to the present, the Institute of Oncology Ljubljana has ensured multidisciplinary genetic care and developed clinical pathways, patients journeys and management guidelines for genetically predisposed individuals. Patients at high risk of cancer have been screened at the Institute of Oncology Ljubljana since the very beginning of the service, and from September 2010 on, also a dedicated outpatient clinic was established. The Institute is one of the few institutions that offers patients not only genetic testing, but comprehensive care that includes genetic counselling, follow-up and screening, preventive interventions, and psychological support.

Slovenia established a national Register of Tested Individuals from Families Burdened with Hereditary Cancer on 1 January 2019, managed by the Institute of Oncology Ljubljana, in accordance with amendments to the Health Care Databases Act (127). The register was modelled on best practices from other European countries and supports cascade genetic testing, targeted screening of relatives, quality monitoring, and population-level epidemiological and clinical research. The register was modelled on best practices from other European countries and supports cascade genetic testing, targeted screening of relatives, quality monitoring, and population-level epidemiological and clinical research. Its national hereditary cancer registry, and its role as an active member and reference center of the European Reference Network for hereditary cancers (ERN GENTURIS) (128). Slovenia's strengths in clinical cancer genetics align closely with the EBCP flagship initiative "Cancer Diagnostic and Treatment for All", which promotes equitable access to NGS-based diagnostics and personalized cancer treatment across Member States (1).

In Slovenia, genetic testing spans primary prevention, diagnostics, and treatment decision-making. Care is delivered through specialized outpatient genetic clinics and multidisciplinary teams. All pediatric, rare cancers and suspected familial cancer syndromes are assessed in line with the established European guidelines. The rapid expansion of precision medicine in oncology, with 47% of EMA approvals for solid tumors (2015-2020) linked to predictive biomarkers (129), underscores the growing importance of advanced molecular diagnostics in cancer care. While Slovenia has long implemented single-biomarker testing as standard practice, the increasing complexity of cancers with multiple actionable targets - such as lung cancer - necessitates broader adoption of multi-biomarker testing using next-generation sequencing (NGS), now widely regarded as the standard of care (130).



#### Looking to the future

Looking ahead, the primary and most important objective in Slovenia remains the provision of high-quality professional care in accordance with Slovenian and international guidelines and recommendations for all individuals who require genetic screening in the field of oncology. An equally important goal is to ensure greater accessibility to specialists, thereby enabling appropriate care for all individuals from families with suspected hereditary cancer, regardless of their region of residence in Slovenia, within an acceptable timeframe.



## Clinical research

Clinical trials are a cornerstone of high-quality cancer care, generating robust evidence on the efficacy and safety of innovative therapies while offering patients early access to potentially life-saving treatments before they become widely available. Strong national clinical research capacity accelerates the translation of innovation into practice and strengthens the evidence base for clinical and policy decision-making. However, as clinical trials are predominantly conducted in university and highly specialized centers, less specialized or smaller centers result in lower trial participation (118).

At EU level, the EBCP calls for reinforced cancer research ecosystems and improved, more equitable access to clinical trials across Member States, notably through initiatives such as the EU Network of Comprehensive Cancer Centers and the establishment of a harmonized legal framework for clinical trials (1). The EU Clinical Trials Regulation (Regulation (EU) No 536/2014), in force since 2022, introduced a centralized EU system for trial authorization and oversight, streamlining approval procedures, facilitating multinational studies, and strengthening Europe's attractiveness as a location for clinical research (131).

Although Slovenia is a small country with a limited overall volume of clinical trial activity, its major clinical and oncology centers are highly engaged in European research consortia and Joint Actions, including EUnetCCC and JANE 1 & 2 (132). These initiatives aim to reduce fragmentation in cancer research and care by enabling structured collaboration across Member States. Within JANE, the strategic objective is to establish seven Networks of Expertise, supported by dedicated Work Packages and transversal task forces, to prepare the operational and governance foundations for new European Networks of Expertise, and critically evaluate and optimize existing EU networking models to enhance future collaboration.

Through active participation in these EU-level initiatives, Slovenia strengthens its clinical research capacity, facilitates knowledge exchange, and positions itself to improve patient access to innovative treatments, while contributing to a more integrated and equitable European cancer research landscape.

# Survivorship

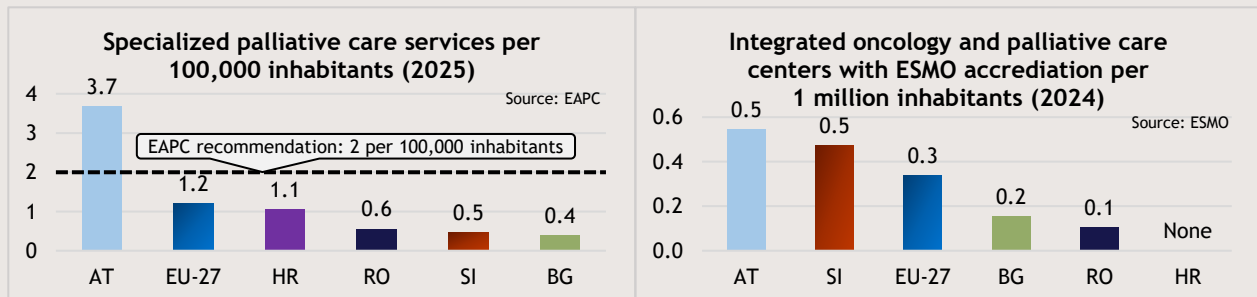
## Access to holistic services and palliative care

### Background

- Roughly a fifth (22%) of Slovenia's population is aged 65 years or older (133), reflecting an ageing population and pointing to a growing demand for palliative care (PC) services. Within oncology, PC has traditionally focused on end-of-life care, but has recently shifted towards integration early in the disease pathways, providing holistic support to ease physical, emotional, and social difficulties resulting from illness (134).
- The availability of PC services in a country is one metric to assess the capacity and potential access to PC. Another metric is the degree to which PC is integrated with the overall healthcare system (135). The European Association for Palliative Care (EAPC) recommends two specialized PC services per 100,000 inhabitants (136).

### Current status in Slovenia

- According to the EAPC, Slovenia has approximately 0.5 specialized (non-cancer-specific) PC services per 100,000 inhabitants in 2025 (137), down from 1.1 in 2019 (136), and below Austria (3.7 per 100,000) and the EU average (1.2 per 100,000). Among the SEE countries, Slovenia outperforms only Bulgaria (0.4 per 100,000) (137).
- Based on a voluntary accreditation system of cancer centers by the European Society for Medical Oncology (ESMO), the Institute of Oncology in Ljubljana is the only Integrated Oncology and Palliative Care Center in Slovenia, with an ESMO accreditation (since 2009), which translates to 0.5 centers per 1 million inhabitants (124, 138).



- Since 2021, systemic financing has enabled mobile palliative care teams (MPCTs) to operate in about half of Slovenia's regions, improving home-based and end-of-life care through close collaboration with primary care physicians. A dedicated oncology MPCT at the OIL provides 24/7 support and integrates ambulatory, home-based, and consultation services for people with advanced cancer (46).
- Slovenia offers extensive psychosocial and supportive services often via NGO-support. However, advancing comprehensive cancer care requires additional workforce capacity and systematic integration of patient-reported outcome measures (PROMs) to ensure value-based and patient-centered care.



#### OREH ("Onkološka REHabilitacija") Pilot study of integrative rehabilitation and support for women with breast cancer

Slovenia has piloted an innovative individualized rehabilitation model for breast cancer patients that integrates medical, psychological, physical, nutritional, and vocational support from the start of treatment. Conducted between 2019 and 2022 with over 430 employed women, the program involved a multidisciplinary team of various specialists who tailored interventions according to each patient's needs. Compared to those receiving standard rehabilitation, participants in the integrated program had 50 fewer days of sick leave on average, better work ability, and significantly lower rates of disability one year after breast cancer treatment. This early, coordinated, and person-centered approach demonstrated how structured rehabilitation pathways can improve recovery outcomes, support return to work, and reduce the socio-economic impact of cancer. Continued investment in such programs can position Slovenia as a leader in holistic cancer survivorship care and reduce the societal and economic burden of this disease (139).

### Recommendations

- Develop practical models for integrating PROMs into routine care that minimize administrative burden, demonstrate clear clinical value for healthcare professionals, and provide meaningful feedback to patients.
- Collaborate with international partners to adopt disease-specific PROMs (e.g. ICHOM, EORTC) that are co-developed with patient representatives and culturally and linguistically adapted for the Slovenian context.
- Establish national targets to guide progress toward value-based healthcare and systematically monitor achievement.
- Ensure 24/7 access to specialist palliative care for all patients with incurable cancers.
- Continue with expansion of holistic rehabilitation programs such as "OREH" (now in colorectal cancer) to strengthen recovery, quality of life, and community reintegration for people living with cancer.

# Survivorship

## Access to financial services (“Right to be forgotten”)

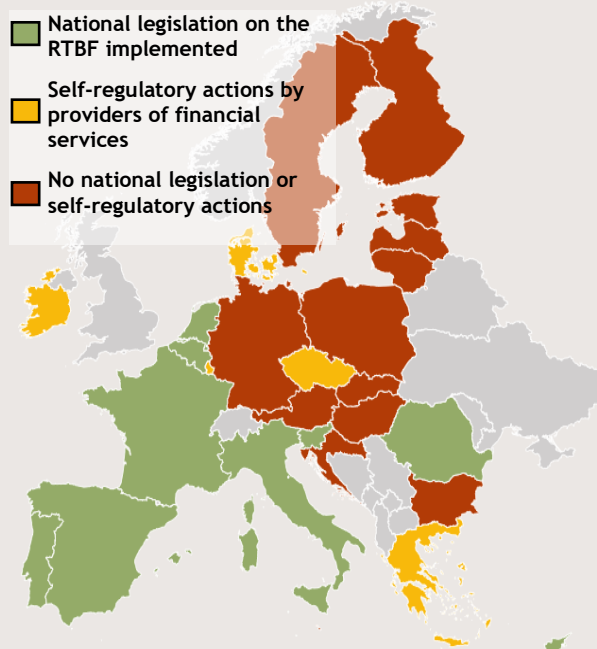
### Background

- There are considerable challenges that cancer survivors face upon completing active treatment. In addition to the psychosocial challenges, they are often also exposed to discriminatory practices and unequal access to financial services such as health insurance, loans, and mortgages (140).
- To improve access to financial products for cancer survivors, and particularly for young people, the concept of the “right to be forgotten” (RTBF) was introduced (140). The concept implies that cancer survivors, after a pre-defined number of years after treatment completion, no longer have to report their cancer history when applying for financial products (141).
- The EBCP states that the European Commission would work with relevant stakeholders to address access to financial products for cancer survivors and engage in dialogue with businesses to develop a code of conduct for business practices of financial service providers (1).

### Current status in Slovenia

- Although the DPOR 2022-2026 did not explicitly include measures related to the RTBF for cancer survivors, the policy landscape has since evolved. In June 2025, Slovenia enacted legislation granting the RTBF to individuals with a history of cancer, hepatitis C, and HIV (Uradni list RS, št. 102/2024), ensuring that past illness cannot be used against them in areas such as insurance or financial services.
- As of December 2025, eight other EU countries - France, Belgium, the Netherlands, Portugal, Romania, Spain, Cyprus, Italy - have adopted national legislation granting cancer survivors the RTBF under clear legal terms (142). The required period after treatment completion varies by country, from 5 years in Belgium, France, and Spain, to 7 years in Romania, and up to 10 years in in Cyprus, Italy, the Netherlands, and Portugal. Most countries apply shorter timeframes for childhood cancer survivors. An additional five EU countries have adopted non-legislative frameworks, either in the form of self-regulatory codes of conduct or formal conventions between governments and insurers (142).

#### Policies of access to financial products for cancer survivors in the EU (December 2025)



#### HOW DOES THE RTBF WORK IN SLOVENIA?

- Individuals can obtain a certificate confirming their eligibility for the RTBF, issued by their personal or family physician, or by an oncologist if they do not have a family physician. The certificate must be recent (not older than six months) and can be presented to banks or insurance companies when applying for financial services.
- Healthcare providers are required to issue the certificate within 30 days.
- The certificate contains no medical details: it does not disclose the diagnosis or any clinical information. It only confirms that the individual meets the legal criteria for protection under the RTBF.

The RTBF in Slovenia	Population
5 years after end of active treatment	For people diagnosed before 21 years of age
7 years or less <sup>1</sup> after active treatment	For individuals diagnosed aged 21 or older

### Recommendations

- Ensure that insurance companies and banks adhere to the new law and medical personnel comply.
- Ensure that patients are adequately informed about the RTBF law and its implications.

<sup>1</sup> Different tumor sites and tumor grades warrant different time span to be able to claim the right to be forgotten. For example, under the group of gynecological cancers, having a CIN III (high grade lesion) which is classified under cervical cancer, the person is eligible to claim the right to be forgotten immediately, in case of cervical cancer grade 1, after 3 years, and in case of higher grades cervical cancers after 5 years. For breast cancer, in case of stage 1, after 1 year, in case of other stages after 5 years.

# Survivorship

## Long-term follow-up

### Background

- Advances in cancer therapy have enabled most children, adolescents, and young adults diagnosed with cancer to survive into adulthood. However, this growing survivor population remains at risk for a range of late-emerging treatment-related complications (143).
- Systematic long-term follow-up is therefore essential to enable early identification and timely management of late effects, while also providing health counselling and support for healthy lifestyles that reduce future risks. In this transition into adulthood, both primary care providers and specialist teams play a critical and expanding role in delivering coordinated, holistic follow-up care that goes beyond routine preventive health services (144).

### Current status in Slovenia

- Slovenia has an established and structured approach to long-term follow-up (LTFU). A dedicated LTFU clinic was first set up in 1986 at the Institute of Oncology Ljubljana to monitor late effects in individuals diagnosed with cancer until the age of 18. Twenty years ago they started life-long LTFU for anyone treated for malignant lymphoma until the age of 30 due to a high risk of late effects (145).
- All eligible survivors are automatically invited for follow-up five years after completing active treatment. Visits are tailored to the patient's specific needs, typically including assessment of organ function (such as cardiac, renal, neurologic, ophthalmologic, auditory, musculoskeletal, and dental health), targeted screening for treatment-related secondary malignancies, referral for genetic counselling when hereditary risk is suspected, and psychological or psychiatric support when needed (145).
- Since 2017, the LTFU clinic has been fully integrated into the DPOR and incorporated into Slovenia's holistic rehabilitation program for oncology patients (145).
- In 2025, the first report focused exclusively on childhood and adolescent cancers monitoring by the Slovenian Cancer Registry and Slovenian Childhood Cancer Clinical Registry was published (146).

#### Adolescents and Young Adults with cancer in the EU spotlight

In 2022, EBCP explicitly recognized the distinct needs of adolescents and young adults (AYAs), thanks in large part to sustained advocacy efforts. The BECA Committee now acknowledges AYAs as a specific patient group, reflecting their unique developmental, medical, and psychosocial needs, particularly in areas such as fertility preservation, a critical concern for this population.

AYAs, defined as individuals diagnosed with cancer between ages 15 and 39, represent a significant and growing share of the global cancer burden. In 2022, an estimated 115 000 AYAs were diagnosed with cancer in Europe (147). Owing to advances in treatment, over 85% reach 5-year survival, although outcomes vary substantially by cancer type and geography (148). Persistent international disparities highlight the influence of diagnostic stage, access to specialized treatment, and referral pathways. Importantly, for some cancers, AYAs experience lower survival rates than younger children with the same diagnosis, pointing to the need for AYA-adapted treatment approaches and consistent access to specialist centers.

Beyond clinical outcomes, AYAs encounter significant psychosocial late effects, including educational or employment disruption, which can negatively impact long-term quality of life. One of the most sensitive and impactful issues is fertility preservation and parenthood planning.

To strengthen AYA-focused cancer care in Europe, the EU-CAYAS-NET consortium was launched under EU4Health and continues with YARN Project that also includes Slovenian partners. Led by patient organizations, the initiative developed evidence-based recommendations to harmonize and improve standards of care, with the ultimate goal of enhancing outcomes and quality of life for all young people affected by cancer (149).

### Recommendations

- Align national definition with international standard and extend the AYA age range to 15-39 years for consistency in data collection, service design, and survivorship planning, especially for data harmonization at the EU level.
- Develop and implement clear clinical guidelines and decision-making aids for fertility preservation, particularly for women of childbearing age diagnosed with cancer, to support timely counselling and equitable access to fertility services.
- Establish dedicated, age-appropriate AYA spaces and services that are diagnosis-naïve and focused on the specific needs of young people. These should leverage existing Slovenian expertise and maintain strong links with EU-level initiatives and projects.
- Integrate AYA-specific PROMs into survivorship care, with particular focus on mental health, fear of cancer recurrence, fatigue, and other late effects, ensuring the tools are co-developed with young people and tailored to pediatric/AYA needs.

## References

1. European Commission. Europe's Beating Cancer Plan: Communication from the Commission to the European Parliament and the Council. 2021.
2. Eurostat. Causes of death - deaths by country of residence and occurrence [hlth\_cd\_aro]. [September 15, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
3. Couespel N, Venegoni E, Lawler M. The European Cancer Pulse: tracking inequalities in cancer control for citizen benefit. *Lancet Oncol.* 2023;24(5):441-2.
4. World Health Organization. Cancer prevention and control in the context of an integrated approach (WHA70.12). 2017.
5. Ministrstvo za zdravje. Državni program obvladovanja raka 2022-2026. 2022.
6. Ministrstvo za zdravje. Slovenija pred novimi presejalnimi programi za raka. [December 15, 2025]. Available from: <https://www.gov.si/novice/2023-03-06-slovenija-pred-novimi-presejalnimi-programi-za-raka/#content>.
7. Ministrstvo za zdravje. Sprejeta strategija za upravljanje in razvoj zdravstvenih delavcev in zdravstvenih sodelavcev. [March 24, 2026]. Available from: <https://www.gov.si/novice/2026-03-12-sprejeta-strategija-za-upravljanje-in-razvoj-zdravstvenih-delavcev-in-zdravstvenih-sodelavcev/>.
8. European Commission. EUnetCCC. [December 18, 2025]. Available from: <https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eunetccc>.
9. EUnetCCC - European Network of Comprehensive Cancer Centres. About EUnetCCC. [December 18, 2025]. Available from: <https://eunetccc2025.eu/>.
10. Ministrstvo za zdravje - Direktorat za digitalizacijo v zdravstvu. Digitalizacija zdravstva. [December 18, 2025]. Available from: <https://www.gov.si/zbirke/projekti-in-programi/prenova-zdravstvenega-sistema/digitalizacija-zdravstva/>.
11. World Health Organization (WHO). Cancer: Reducing the burden. [September 17, 2025]. Available from: <https://www.who.int/news-room/fact-sheets/detail/cancer>.
12. European Network of Cancer Registries (ENCR). Europe launches CancerWatch: improving cancer data quality and timeliness to strengthen cancer control. [December 18, 2025]. Available from: <https://www.encr.eu/CancerWatch>.
13. Zadnik V, Žagar T. SLORA: Slovenia and cancer. *Epidemiology and Cancer Registry. Institute of Oncology Ljubljana*; [November 20, 2025]. Available from: <https://www.slora.si/>.
14. ECIS - European Cancer Information System. Data Explorer: 2022 estimates. [November 20, 2025]. Available from: <https://ecis.jrc.ec.europa.eu/data-explorer>.
15. Onkološki inštitut Ljubljana. Rak v Sloveniji 2022. 2025.
16. Onkološki inštitut Ljubljana. Rak v Sloveniji 2014. 2017.
17. Onkološki inštitut Ljubljana. Rak v Sloveniji 2021. 2024.
18. Allemani C, Matsuda T, Di Carlo V, Harewood R, Matz M, Niksic M, et al. Global surveillance of trends in cancer survival 2000-14 (CONCORD-3): analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries. *Lancet.* 2018;391(10125):1023-75.
19. Hofmarcher T, Lindgren P, Wilking N, Jönsson B. The cost of cancer in Europe 2018. *Eur J Cancer.* 2020;129:41-9.
20. Manzano A, Svedman C, Hofmarcher T, Wilking N. *Comparator Report on Cancer in Europe 2025 - Disease Burden, Costs and Access to Medicines and Molecular Diagnostics.* Lund: IHE, 2025.
21. Jönsson B, Hofmarcher T, Lindgren P, Wilking N. *Comparator report on patient access to cancer medicines in Europe revisited.* Lund: IHE, 2016.
22. Vrdoljak E, Bodoky G, Jassem J, Popescu R, Pirker R, Cufer T, et al. Expenditures on Oncology Drugs and Cancer Mortality-to-Incidence Ratio in Central and Eastern Europe. *Oncologist.* 2019;24(1):e30-e7.
23. International Agency for Research on Cancer. *European Code Against Cancer, 5th edition.* [December 12, 2025]. Available from: <https://cancer-code-europe.iarc.who.int/>.
24. World Health Organization (WHO). Health Promotion: Health literacy. [November 18, 2025]. Available from: <https://www.who.int/teams/health-promotion/enhanced-wellbeing/seventh-global-conference/health-literacy>.
25. Sykes S, Wills J, Rowlands G, Popple K. Understanding critical health literacy: a concept analysis. *BMC Public Health.* 2013;13:150.
26. Baccolini V, Rosso A, Di Paolo C, Isonne C, Salerno C, Migliara G, et al. What is the Prevalence of Low Health Literacy in European Union Member States? A Systematic Review and Meta-analysis. *J Gen Intern Med.* 2021;36(3):753-61.
27. Aaby A, Friis K, Christensen B, Rowlands G, Maindal HT. Health literacy is associated with health behaviour and self-reported health: A large population-based study in individuals with cardiovascular disease. *Eur J Prev Cardiol.* 2017;24(17):1880-8.
28. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med.* 2011;155(2):97-107.
29. The Action Network on Measuring Population and Organizational Health Literacy (M-POHL). *International Report on the Methodology, Results, and Recommendations of the European Health Literacy Population Survey 2019-2021 (HLS19) of M-POHL.* Vienna: 2021.
30. Vrdelja M, Vrbovšek S, Berzelak N. Health literacy of Slovenian adults: Results of the Slovenian Health Literacy Survey (HLS-S19). 2022.
31. Ministrstvo za zdravje. *Nacionalna strategija zdravstvene pismenosti 2025-2035.* 2025.
32. World Health Organization (WHO). Tobacco. [November 21, 2025]. Available from: <https://www.who.int/health-topics/tobacco>.
33. U.S. Department of Health and Human Services. *A Report of the Surgeon General: The Health Consequences of Smoking—50 Years of Progress.* 2014.

34. Wild CP, Weiderpass E, Stewart BW. World Cancer Report: Cancer Research for Cancer Prevention. Lyon, France: International Agency for Research on Cancer. 2020.
35. World Health Organization (WHO). Tobacco-related cancers and prevention. [November 21, 2025]. Available from: <https://cancerprevention.euro.iaarc.fr/european-code-against-cancer/tobacco-related-cancers-and-prevention>.
36. World Health Organization (WHO). MPOWER. [May 12, 2025]. Available from: <https://www.who.int/initiatives/mpower>.
37. World Health Organization (WHO). WHO technical manual on tobacco tax policy and administration. 2021.
38. World Health Organization (WHO). MPOWER Portal. [March 5, 2026]. Available from: <https://www.mpowerportal.org/>.
39. World Health Organization (WHO). WHO report on the global tobacco epidemic, 2025: warning about the dangers of tobacco. 2025.
40. Legal Information System (PIS). Restriction of the Use of Tobacco Products Act (ZOUTI). [November 21, 2025]. Available from: <http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO471>.
41. Organisation for Economic Co-operation and Development (OECD). Health: Risk factors for health: Tobacco consumption. [November 21, 2025]. Available from: <https://data-explorer.oecd.org>.
42. Eurostat. Smoking of tobacco products by sex, age and country of birth [hlth\_ehis\_sk1b]. [November 21, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
43. Nacionalni inštitut za javno zdravje (NIJZ). Zdravje v občini: Kazalnik K2.3 Kadilci. [November 21, 2025]. Available from: <https://obcine.nijz.si/kazalniki/K2.3/statistika/>.
44. The Health Behaviour in School-aged Children (HBSC) study. HBSC study data browser. [December 12, 2025]. Available from: <https://data-browser.hbsc.org/>.
45. Klanšček HJ, Furman L, Roškar M, Drev A, Pucelj V, Koprivnikar H, et al. Z zdravjem povezana vedenja v šolskem obdobju med mladostniki v Sloveniji: Izsledki mednarodne raziskave HBSC, 2022. 2023.
46. OECD/European Commission. EU Country Cancer Profile: Slovenia 2025. 2025.
47. Tax Foundation. Cigarette Taxes in Europe. [November 21, 2025]. Available from: <https://taxfoundation.org/data/all/eu/cigarette-taxes-europe-2024/>.
48. European Commission. Revision of the Tobacco Taxation Directive (proposal): Revision of EU legislation on excise duties for manufactured tobacco. [March 5, 2026]. Available from: [https://taxation-customs.ec.europa.eu/taxation/excise-duties/excise-duties-tobacco/revision-tobacco-taxation-directive-proposal\\_en](https://taxation-customs.ec.europa.eu/taxation/excise-duties/excise-duties-tobacco/revision-tobacco-taxation-directive-proposal_en).
49. World Health Organization (WHO). Global status report on alcohol and health and treatment of substance use disorders. 2024.
50. World Health Organization (WHO). Global alcohol action plan 2022-2030. 2024.
51. World Health Organization (WHO). NCD Global Monitoring Framework. [December 2, 2025]. Available from: <https://www.who.int/publications/i/item/ncd-surveillance-global-monitoring-framework>.
52. Keršmanc MH, Roškar M, Rehberger M, Lavtar D, Korošec A. Pitje alkoholnih pijač med prebivalci Slovenije : izsledki Nacionalne raziskave o tobaku, alkoholu in drugih drogah : ATADD 2023. Nacionalni inštitut za javno zdravje (NIJZ). 2025.
53. World Health Organization (WHO). Alcohol, total per capita (15+) consumption (in litres of pure alcohol) (SDG Indicator 3.5.2). [December 2, 2025]. Available from: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/total-\(recorded-unrecorded\)-alcohol-per-capita-\(15-\)-consumption](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/total-(recorded-unrecorded)-alcohol-per-capita-(15-)-consumption).
54. Ministrstvo za zdravje. Sprejet je Program omejevanja porabe alkohola za obdobje 2025-2026. [December 12, 2025]. Available from: <https://www.gov.si/novice/2024-11-28-sprejet-je-program-omejevanja-porabe-alkohola-za-obdobje-20252026/>.
55. World Health Organization (WHO). Obesity and overweight. [October 29, 2025]. Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>.
56. World Health Organization (WHO). WHO European Regional Obesity Report 2022. 2022.
57. SAFE - Safe Food Advocacy Europe. Actions & Campaigns: SAFE, an evaluator of the EU Action Plan on Childhood Obesity (2014-2020). [October 29, 2025]. Available from: <https://www.safefoodadvocacy.eu/actions-campaigns/safe-an-evaluator-of-the-eu-action-plan-on-childhood-obesity-2014-2020/>.
58. Official Journal of the European Union. Opinion of the European Economic and Social Committee on 'Measures to reduce child obesity' (Exploratory opinion at the request of the Spanish Presidency) (2023/C 349/17), OJ C 349, 29.9.2023, pp. 108-115. [October 29, 2025]. Available from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52023AE0880>.
59. World Health Organization (WHO). WHO acceleration plan to stop obesity. 2023.
60. World Health Organization (WHO). Overweight among adults, BMI  $\geq$  25, prevalence (age-standardized estimate) (%) [Indicator Id: 2390]. [November 30, 2025]. Available from: <https://www.who.int/data/gho/data/indicators>.
61. Eurostat. Person distribution by body mass index, educational attainment level, sex and age [ilc\_hch10]. [November 30, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
62. Organisation for Economic Co-operation and Development (OECD). Tackling the Impact of Cancer on Health, the Economy and Society. 2024.
63. European Cancer Organisation. A Four Step Plan for Eliminating HPV Cancers in Europe. 2020.
64. World Health Organization (WHO). Cervical cancer. [December 16, 2025]. Available from: <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>.
65. Nacionalni inštitut za javno zdravje (NIJZ). Okužba s HPV, rak materničnega vratu in cepljenje proti HPV. [December 16, 2025]. Available from: <https://nijz.si/nalezljive-bolezni/cepljenje/okužba-s-hpv-rak-maternicnega-vratu-in-cepljenje-proti-hpv/>.

66. World Health Organization (WHO). Human Papillomavirus (HPV) vaccination coverage. [December 18, 2025]. Available from: [https://immunizationdata.who.int/global/wiise-detail-page/human-papillomavirus-\(hpv\)-vaccination-coverage](https://immunizationdata.who.int/global/wiise-detail-page/human-papillomavirus-(hpv)-vaccination-coverage).
67. Nacionalni inštitut za javno zdravje (NIJZ). Odpravimo raka materničnega vratu - ključno je cepljenje proti HPV. [December 18, 2025]. Available from: <https://nijz.si/nalezljive-bolezni/cepljenje/odpravimo-raka-maternicnega-vratu-kljucno-je-cepljenje-proti-hpv/>.
68. Nacionalni inštitut za javno zdravje (NIJZ). Preliminarno poročilo o precepljenosti šolskih otrok v Sloveniji v šolskem letu 2024/2025. Center za nalezljive bolezni. 2025.
69. Irzaldy A, Jerman T, de Kok IMCM, Hontelez JAC, de Koning HJ, Jansen EEL, et al. Impact of a national HPV vaccination programme for preadolescent girls on cytology screening performance and CIN2+ incidence: five-year population-based cervical screening results from Slovenia. *The Lancet Regional Health - Europe*. 2025;50.
70. World Health Organization (WHO). A short guide to cancer screening: increase effectiveness, maximize benefits and minimize harm. 2022.
71. Manzano A, Hofmarcher T. Improving the care of women with triple-negative breast cancer. Lund: IHE, 2023.
72. European Commission: Directorate-General for Health and Consumers, Karsa Lv, Holland R, Broeders M, Wolf Cd, Perry N, et al. European guidelines for quality assurance in breast cancer screening and diagnosis - Fourth edition, supplements. Publications Office, 2013.
73. Council of the European Union. Council Recommendation of 9 December 2022 on strengthening prevention through early detection: A new EU approach on cancer screening replacing Council Recommendation 2003/878/EC 2022/C 473/01. 2022.
74. Državni presejalni program za raka dojke - DORA. [December 19, 2023]. Available from: <https://dora.onko-i.si>.
75. Zavod za zdravstveno zavarovanje Slovenije (ZZZS). Letno poročilo ZZZS 2022. 2023.
76. Državni presejalni program za raka dojke - DORA. Program DORA: LETNO POROČILO 2024. Onkološki inštitut Ljubljana. 2025.
77. Eurostat. Preventive cancer screenings - programme data [hlth\_ps\_prev]. [November 24, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
78. Eurostat. Self-reported last breast examination by X-ray among women by age and educational attainment level [hlth\_ehis\_pa7e]. [November 24, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
79. Eurostat. Self-reported last breast examination by X-ray among women by age and income quintile [hlth\_ehis\_pa7i]. [November 24, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
80. Državni presejalni program za raka dojke - DORA. Raziskava za širitev starostne skupine programa DORA. [December 18, 2025]. Available from: <https://dora.onko-i.si/raziskava>.
81. Cancer Research UK. Survival for cervical cancer. [December 16, 2025]. Available from: <https://www.cancerresearchuk.org/about-cancer/cervical-cancer/survival>.
82. McGarvey N, Gitlin M, Fadli E, Chung KC. Increased healthcare costs by later stage cancer diagnosis. *BMC Health Serv Res*. 2022;22(1):1155.
83. European Commission: Directorate-General for Health and Food Safety, Karsa Lv, Dillner J, Suonio E, Törnberg S, Anttila A, et al. European guidelines for quality assurance in cervical cancer screening - Second edition - Supplements. Publications Office, 2015.
84. Državni program zgodnjega odkrivanja predrakavih sprememb materničnega vratu - Zora. Program Zora. [November 24, 2025]. Available from: <https://zora.onko-i.si/program-zora>.
85. National Cervical Cancer Screening Programme - ZORA. Monitoring and evaluation: Examination coverage. [November 24, 2025]. Available from: <https://zora.onko-i.si/en/monitoring-and-evaluation/examination-coverage>.
86. Ivanuš U, Jerman T, Gašper Oblak U, Meglič L, Florjančič M, Strojjan Fležar M, et al. The impact of the COVID-19 pandemic on organised cervical cancer screening: The first results of the Slovenian cervical screening programme and registry. *The Lancet Regional Health - Europe*. 2021;5.
87. Eurostat. Self-reported last cervical smear test among women by age and educational attainment level [hlth\_ehis\_pa8e]. [November 24, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
88. Digestive Cancers Europe. Roadmap for the Prevention and Treatment of Colorectal Cancer in Europe. 2020.
89. Cancer Research UK. Survival for bowel cancer. [December 14, 2025]. Available from: <https://www.cancerresearchuk.org/about-cancer/bowel-cancer/survival>.
90. Shaukat A, Levin TR. Current and future colorectal cancer screening strategies. *Nat Rev Gastroenterol Hepatol*. 2022;19(8):521-31.
91. European Commission: Executive Agency for Health and Consumers, Directorate-General for Health and Consumers, World Health Organization, Karsa Lv, Patnick J, Segnan N. European guidelines for quality assurance in colorectal cancer screening and diagnosis: Publications Office; 2010.
92. Svit program. Kako deluje Program Svit? [December 14, 2025]. Available from: [www.program-svit.si](http://www.program-svit.si).
93. Svit program. Letno poročilo o delovanju Programa Svit za obdobje od 1. 1. do 31. 12. 2024. 2025.
94. Klabunde C, Blom J, Bulliard JL, Garcia M, Hagoel L, Mai V, et al. Participation rates for organized colorectal cancer screening programmes: an international comparison. *J Med Screen*. 2015;22(3):119-26.
95. Nielsen JB, Berg-Beckhoff G, Leppin A. To do or not to do - a survey study on factors associated with participating in the Danish screening program for colorectal cancer. *BMC Health Serv Res*. 2021;21(1):43.
96. van de Schootbrugge-Vandermeer HJ, Lansdorp-Vogelaar I, de Jonge L, van Vuuren AJ, Dekker E, Spaander MCW, et al. Socio-demographic and cultural factors related to non-participation in the Dutch colorectal cancer screening programme. *Eur J Cancer*. 2023;190:112942.
97. Artama M, Heinävaara S, Sarkeala T, Prättälä R, Pukkala E, Malila N. Determinants of non-participation in a mass screening program for colorectal cancer in Finland. *Acta Oncol*. 2016;55(7):870-4.
98. Svit program. Poročila o izvajanju programa. [December 16, 2025]. Available from: <https://www.program-svit.si/za-uporabnike/o-nas/>.

99. Eurostat. Self-reported last colorectal cancer screening test by sex, age and educational attainment level [hlth\_ehis\_pa5e]. [November 24, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
100. Ministrstvo za zdravje. V boju proti raku bo zavel nov veter - snujemo programa LUKA in PETER. [December 15, 2025]. Available from: <https://www.gov.si/novice/2025-03-03-v-boju-proti-raku-bo-zavel-nov-veter-snujemo-programa-luka-in-peter/>.
101. Nacionalni inštitut za javno zdravje (NIJZ). Ste prejeli vabilo ZD Ljubljana na preventivno presejalno testiranje na bakterijo H. pylori? [December 15, 2025]. Available from: <https://nijz.si/nenalezljive-bolezni/ste-prejeli-vabilo-zd-ljubljana-na-preventivno-presejalno-testiranje-na-bakterijo-h-pylori/>.
102. Nacionalni inštitut za javno zdravje (NIJZ). EUROHELICAN: Preprečevanje raka želodca z iskanjem in zdravljenjem okužbe s Helicobacter pylori. [March 24, 2026]. Available from: <https://nijz.si/projekti/eurohelican/>.
103. Soukup T, Lamb BW, Arora S, Darzi A, Sevdalis N, Green JS. Successful strategies in implementing a multidisciplinary team working in the care of patients with cancer: an overview and synthesis of the available literature. J Multidiscip Healthc. 2018;11:49-61.
104. Saab MM, McCarthy M, O'Driscoll M, Sahm LJ, Leahy-Warren P, Noonan B, et al. A systematic review of interventions to recognise, refer and diagnose patients with lung cancer symptoms. NPJ Prim Care Respir Med. 2022;32(1):42.
105. Karam M, Chouinard MC, Poitras ME, Couturier Y, Vedel I, Grgurevic N, et al. Nursing Care Coordination for Patients with Complex Needs in Primary Healthcare: A Scoping Review. Int J Integr Care. 2021;21(1):16.
106. Ministry of Health. We will prepare healthcare for all challenges that lie ahead. [December 16, 2025]. Available from: <https://www.gov.si/en/news/2023-01-20-we-will-prepare-healthcare-for-all-challenges-that-lie-ahead/>.
107. Eurostat. Health personnel [hlth\_rs\_prs2]. [November 30, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
108. Eurostat. Physicians by category [hlth\_rs\_physcat]. [November 30, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
109. Eurostat. Self-reported unmet needs for medical examination due to financial reasons, long waiting list or distance by sex, age and risk of poverty threshold - % of the persons having the same needs [hlth\_silc\_08b]. [November 30, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
110. Eurostat. Physicians by medical speciality - historical data (1985-2016) [hlth\_rs\_spec]. [November 30, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
111. Eurostat. Devices for medical imaging [hlth\_rs\_medim]. [November 22, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
112. Eurostat. Medical technologies - examinations by medical imaging techniques (CT, MRI and PET) [hlth\_co\_exam]. [November 22, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
113. European Federation of Pharmaceutical Industries and Associations (EFPIA). The root cause of unavailability and delay to innovative medicines: Reducing the time before patients have access to innovative medicines. 2023.
114. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2024 Survey. 2025.
115. European Commission. Commission welcomes political agreement on major reform of EU pharmaceutical rules. [December 17, 2025]. Available from: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_25\\_3015](https://ec.europa.eu/commission/presscorner/detail/en/ip_25_3015).
116. European Commission. Implementation of the Regulation on health technology assessment. [December 17, 2025]. Available from: <https://health.ec.europa.eu/health-technology-assessment/implementation-regulation-health-technology-assessment>.
117. European Medicines Agency (EMA). Medicines. [December 17, 2025]. Available from: <https://www.ema.europa.eu/en/medicines>.
118. Hofmarcher T, Berchet C, Dedet G. Access to oncology medicines in EU and OECD countries. OECD Health Working Papers No. 170, 2024.
119. Lievens Y, Borrás JM, Grau C. Provision and use of radiotherapy in Europe. Mol Oncol. 2020;14(7):1461-9.
120. International Atomic Energy Agency (IAEA). Radiotherapy in Cancer Care: Facing the Global Challenge. 2017.
121. Slotman BJ, Cottier B, Bentzen SM, Heeren G, Lievens Y, van den Bogaert W. Overview of national guidelines for infrastructure and staffing of radiotherapy. ESTRO-QUARTS: work package 1. Radiother Oncol. 2005;75(3):349-54.
122. Eurostat. Devices for medical imaging [hlth\_rs\_medim]. [September 9, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
123. International Atomic Energy Agency (IAEA). DIRAC - Directory of RAdiotherapy Centres. [October 15, 2025]. Available from: <https://dirac.iaea.org/Query/Countries>.
124. Eurostat. Population on 1 January by age and sex [demo\_pjan]. [October 15, 2025]. Available from: <https://ec.europa.eu/eurostat/data/database>.
125. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2024;74(3):229-63.
126. Blatnik A, Krajc M. Kaj je dedni rak? Dedno pogojeni raki - Genetsko svetovanje in testiranje. Ljubljana: Onkološki inštitut Ljubljana. 2020.
127. Uradni list Republike Slovenije. 1410. Zakon o spremembah in dopolnitvah Zakona o zbirkah podatkov s področja zdravstvenega varstva (ZZPPZ-B), stran 4633. 31/2018. [December 16, 2025]. Available from: <https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2018-01-1410/>.
128. Onkološki inštitut Ljubljana. Sektor presejalnih programov in onkološke klinične genetike - Oddelek za onkološko klinično genetiko. [December 16, 2025]. Available from: <https://www.onko-i.si/o-nas/sektorji-in-oddelki/sektor-presejalnih-programov-in-onkoloske-klinicne-genetike/oddelek-za-onkolosko-klinicno-genetiko>.

129. Falcone R, Lombardi P, Filetti M, Duranti S, Pietragalla A, Fabi A, et al. Oncologic Drugs Approval in Europe for Solid Tumors: Overview of the Last 6 Years. *Cancers* (Basel). 2022;14(4).
130. Mosele MF, Westphalen CB, Stenzinger A, Barlesi F, Bayle A, Bièche I, et al. Recommendations for the use of next-generation sequencing (NGS) for patients with advanced cancer in 2024: a report from the ESMO Precision Medicine Working Group. *Ann Oncol*. 2024;35(7):588-606.
131. European Commission. Clinical trials - Regulation EU No 536/2014. [September 8, 2025]. Available from: <https://health.ec.europa.eu/medicinal-products/clinical-trials/clinical-trials-regulation-eu-no-5362014>.
132. JANE. Shaping the EU Networks of Expertise on cancer! [December 18, 2025]. Available from: <https://jane-project.eu/>.
133. The World Bank. Population ages 65 and above (% of total population). [November 30, 2025]. Available from: <https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS>.
134. Kaasa S, Loge JH, Aapro M, Albrecht T, Anderson R, Bruera E, et al. Integration of oncology and palliative care: a Lancet Oncology Commission. *The Lancet Oncology*. 2018;19(11):e588-e653.
135. Arias-Casais N, Garralda E, Sánchez-Cárdenas MA, Rhee JY, Centeno C. Evaluating the integration of palliative care in national health systems: an indicator rating process with EAPC task force members to measure advanced palliative care development. *BMC Palliative Care*. 2021;20(1):36.
136. Arias-Casais N, Garralda E, Rhee JY, de Lima L, Pons JJ, Clark D, et al. EAPC Atlas of Palliative Care in Europe 2019. 2019.
137. Garralda E, Tripodoro VA, Ling J, Brennan J, Montero Á, Bastos F, et al. EAPC Atlas of Palliative Care in the European region 2025. 2025.
138. European Society for Medical Oncology (ESMO). ESMO Accredited Designated Centres. [November 30, 2025]. Available from: <https://www.esmo.org/for-patients/esmo-designated-centres-of-integrated-oncology-palliative-care/esmo-accredited-designated-centres>.
139. Basic N, Borovcic MK, Mavric Z, Mozetic A, Zagar T, Homar V, et al. Early integrated rehabilitation and vocational rehabilitation in 435 patients with breast cancer: A comparison between the intervention group and control group in a prospective study. *Journal of Clinical Oncology*. 2024;42(16\_suppl):11007-.
140. Scocca G, Meunier F. A right to be forgotten for cancer survivors: A legal development expected to reflect the medical progress in the fight against cancer. *Journal of Cancer Policy*. 2020;25:100246.
141. European Commission. Access to financial products for persons with a history of cancer in EU Member States. 2022.
142. Meunier F. Ending discrimination against cancer survivors. [December 17, 2025]. Available from: <https://endingdiscrimination-cancersurvivors.eu>.
143. Janssen SHM, Vlooswijk C, Bijlsma RM, Kaal SEJ, Kerst JM, Tromp JM, et al. Health-related quality of life of long-term adolescent and young adult (AYA) cancer survivors compared to a matched normative population: results of the SURVAYA study. *J Cancer Surviv*. 2025.
144. Hudson MM, Bhatia S, Casillas J, Landier W. Long-term Follow-up Care for Childhood, Adolescent, and Young Adult Cancer Survivors. *Pediatrics*. 2021;148(3).
145. Onkološki inštitut Ljubljana. Oddelek za specialistične ambulante - Pododdelek za ugotavljanje poznih posledic zdravljenja raka. [December 18, 2025]. Available from: <https://www.onko-i.si/za-bolnike/podporno-zdravljenje/pozne-posledice-zdravljenja/pododdelek-za-ugotavljanje-poznih-posledic-zdravljenja-raka>.
146. Onkološki inštitut Ljubljana. Raki v otroštvu in mladostništvu 1983-2023: poročilo Registra raka Republike Slovenije in Kliničnega registra otroških rakov. 2025.
147. Trama A, Stark D, Bozovic-Spasojevic I, Gaspar N, Peccatori F, Toss A, et al. Cancer burden in adolescents and young adults in Europe. *ESMO Open*. 2023;8(1).
148. Trama A, Botta L, Stiller C, Visser O, Cañete-Nieto A, Spycher B, et al. Survival of European adolescents and young adults diagnosed with cancer in 2010-2014. *Eur J Cancer*. 2024;202:113558.
149. Košir U, Totovina A, Stark D, Ferrari A, de Munter J, van der Graaf WTA, et al. Minimum standards of specialist adolescent and young adult (AYA) cancer care units: recommendations and implementation roadmap. *ESMO Open*. 2025;10(10).
150. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2019 Survey. 2020.
151. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2020 Survey. 2021.
152. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2021 Survey. 2022.
153. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2022 Survey. 2023.
154. European Federation of Pharmaceutical Industries and Associations (EFPIA). EFPIA Patients W.A.I.T. Indicator 2023 Survey. 2024.

## Appendix: Methodology and sources for indicators

Governance	
National cancer plan	Analysis of the DPOR 2022-2026 (5). <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Presence of national cancer plan in 2025 (yes = at benchmark)</li> </ul>
Disease burden	
Incidence (new cases)	Data were sourced from the SLORA (13) and ECIS (14) databases. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Incidence crude rate per 100,000 inhabitants in 2022, All sites but non-melanoma skin, All ages, Both sexes (14).</li> </ul>
Mortality (deaths)	Data were sourced from the SLORA (13) and ECIS (14) databases. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Mortality crude rate per 100,000 inhabitants in 2022, All sites but non-melanoma skin, All ages, Both sexes (14).</li> </ul>
Survival rates	Data were sourced from the Slovenian Cancer Registry (Rak v Sloveniji) (15, 16) and Allemanni et al (2018) (18). <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Weighted average of 5-year age-standardized net survival rates of breast, colon, lung, and prostate cancer in the diagnosis period 2010-2014 (18), based on 2022 incidence estimates (14).</li> </ul>
Economic burden	
Health spending on cancer	Data on the economic burden of cancer in Slovenia in 2018 were sourced from Hofmarcher et al. (2020) (19). Data on the healthcare and cancer care expenditure, as well as the cost of lost productivity among working-age patients, in 2023 were sourced from Manzano et al. (2025) (20); values for 2000 to 2020 are unpublished data from Manzano et al. (2025). <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Healthcare spending on cancer per capita in EUR in 2023 (PPP-adjusted) (20).</li> <li>• Productivity losses from cancer per capita in EUR in 2023 (PPP-adjusted) (20).</li> </ul>
Productivity losses	
Prevention	
National health literacy strategy	<b>1<sup>st</sup> graph:</b> European Health Literacy Population Survey 2019-2021 (HLS19) (29). The graph includes selected survey questions related to health prevention. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Presence of national strategy in 2025 (yes = at benchmark) (31).</li> </ul>
Tobacco smoking	<b>1<sup>st</sup> graph:</b> OECD (41). Specification: Health: Risk factors for health: Tobacco consumption; share (%) of population aged 15+ who are daily smokers (years 2007, 2014, 2019). <b>2<sup>nd</sup> graph:</b> Eurostat (42). Smoking of tobacco products by sex, age and country of birth. Specification: Daily and occasional smokers, by sex, 15 years or older, reporting country, 2019. <b>3<sup>rd</sup> graph:</b> Tax Foundation (47). Excise Duties on Cigarettes in EU Member States as of July 1, 2024. Specifications: 2024 tax, 2023 retail prices. Total tax includes excise duty and VAT. All numbers are for a 20-pack of cigarettes. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Overall smoking (daily and occasional) rates among adults in 2019 (42).</li> </ul>
Alcohol consumption	<b>1<sup>st</sup> graph:</b> Own calculations based on results of the National Survey on Tobacco, Alcohol and Other Drugs - ATADD 2023 (52). To benchmark ATADD 2023 against the DPOR indicator “above low-risk alcohol consumption” (ages 15-64), we applied the DPOR/ATADD definition: for minors (15-17), any alcohol use in the past 12 months qualifies as above low-risk; for adults (18-64), above low-risk (“hazardous/harmful”) use is defined as exceeding the low-risk daily limit (>10 g pure alcohol/day for women or >20 g/day for men; 1 unit = 10 g) and/or reporting intoxication at least once in the past 12 months (5, 52). As ATADD reports hazardous/harmful use among adults conditional on drinking, we estimated the prevalence in the full 18-64 population as <i>prevalence(drinking in past 12 months) × prevalence(hazardous/harmful use   drinkers)</i> , and derived the 15-64 estimate by aggregating above-low-risk counts across ages 15-17 and 18-64 and dividing by the total 15-64 sample. <b>2<sup>nd</sup> graph:</b> Health Behaviour in School-aged Children (HBSC) survey 2022 (45). Proportion of 15-year-olds who consumed alcohol by age 13 or earlier (years 2002, 2006, 2010, 2014, 2018, 2022). <b>3<sup>rd</sup> &amp; 4<sup>th</sup> graph:</b> WHO (53). Alcohol, total per capita (15+) consumption (in liters of pure alcohol) (SDG Indicator 3.5.2). Unweighted EU average. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Reduction in per capita alcohol consumption (liters/year) in 2022 relative to 2010 levels (53).</li> </ul>
Overweight and obesity	<b>1<sup>st</sup> graph:</b> WHO (60). Prevalence of overweight among adults aged 18+, BMI ≥ 25 (age-standardized estimate) (%). Specification: Both sexes, 2000-2022, %. <b>2<sup>nd</sup> graph:</b> Eurostat (61). Person distribution by body mass index, educational attainment level, sex and age. Specification: overweight, by sex, all educational levels (ISCED 2011 levels 0-8), 2022. Data not available for DE. <b>3<sup>rd</sup> graph:</b> Eurostat (61). Person distribution by body mass index, educational attainment level, sex and age. Specification: overweight, both sexes, by educational level (lower secondary education (levels 0-2); upper secondary education (levels 3 and 4); tertiary education (levels 5-8)). <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• Prevalence of overweight and obesity (BMI ≥25) in adults in 2022 (60).</li> </ul>
HPV vaccination	<b>1<sup>st</sup> graph:</b> WHO (66). Human Papillomavirus (HPV) vaccination coverage. Specification: HPV Vaccination coverage by age 15, last dose, females; 2024. Data not available for EL and PL. Unweighted EU average. <b>2<sup>nd</sup> graph:</b> Data sourced from the NIJZ website for school years 2009/10-2023/24 (67) and the preliminary report on the vaccination coverage of school children in Slovenia for the 2024/25 school year (68). <b>3<sup>rd</sup> graph:</b> Center for Infectious Diseases, NIJZ (68). Preliminary report on the vaccination coverage of school children in Slovenia in the 2024/2025 school year. <b>For dashboard overview:</b> <ul style="list-style-type: none"> <li>• HPV VCR in girls by age 15 in 2024 (66).</li> </ul>

Early detection	
Breast cancer screening	<p><b>1<sup>st</sup> graph:</b> DORA annual report 2024 (76).</p> <p><b>2<sup>nd</sup> graph:</b> Eurostat (77). Specification: Preventive cancer screenings - programme data; Malignant neoplasm of breast; Females; 2023. Numbers show the share of women who have been screened for breast cancer within the past two years (or per national screening interval), presented as a proportion of those eligible for an organized program in the given country. No breast cancer screening program in BG and RO. Data not available for PT. Unweighted EU average</p> <p><b>3<sup>rd</sup> graph:</b> Eurostat (78). Specification: Self-reported last breast examination by X-ray among women by age and educational attainment level; Slovenia; age 50-69 years; within "less than 2 years"; 2019.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• DORA participation rate in 2024 (76).</li> </ul>
Cervical cancer screening	<p><b>1<sup>st</sup> graph:</b> Data sourced from the ZORA website (85). Specification: Monitoring and evaluation; Examination coverage by health region in 2021-2024.</p> <p><b>2<sup>nd</sup> graph:</b> Eurostat (77). Specification: Preventive cancer screenings - programme data; Malignant neoplasm of cervix uteri; Females. Numbers show the share of women who have been screened for cervical cancer within the past three years (or per national screening interval), presented as a proportion of those eligible for an organized program in the given country. No cervical cancer screening program in AT, BG, CY, and EL. Data from 2022 instead of 2023 for DK. Unweighted EU average.</p> <p><b>3<sup>rd</sup> graph:</b> Eurostat (87). Specification: Self-reported last cervical smear test among women by age and educational attainment level; Slovenia; age 20-69; within "less than 3 years"; 2019.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• ZORA participation rate in 2021-2024 (85).</li> </ul>
Colorectal cancer screening	<p><b>1<sup>st</sup> graph:</b> Svit annual report 2024 (93).</p> <p><b>2<sup>nd</sup> graph:</b> Eurostat (77). Specification: Preventive cancer screenings - programme data; Malignant neoplasm of colon, rectosigmoid junction, rectum, anus and anal canal; males and females ("Total"). Numbers show the share of men and women who have been screened for colorectal cancer within the past two years (or per national screening interval), presented as a proportion of those eligible for an organized program in the given country. No colorectal screening program in AT, BG, CT, EL, and RO. Data unavailable for DE and PL. Unweighted EU average.</p> <p><b>3<sup>rd</sup> graph:</b> Eurostat (99). Specification: Self-reported last colorectal cancer screening test by sex, age and educational attainment level; Slovenia; age 50-74; males and females ("Total"); within "less than 2 years"; 2019.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Svit participation rate in 2024 (93).</li> </ul>
Diagnosis and treatment	
Health workforce	<p><b>1<sup>st</sup> graph:</b> Eurostat (107). Specification: Health personnel. Number of practicing physicians per 100,000 inhabitants in 2010-2023. Data unavailable for IE in 2010; NL in 2010-2013; EL, PT, and SK in 2010-2023; CZ in 2014-2017; LU in 2018-2023; SE in 2023. Unweighted EU average.</p> <p><b>2<sup>nd</sup> graph:</b> Eurostat (108). Physicians by category. Number of generalist medical practitioners per 100,000 inhabitants. Data unavailable for CY in 2010-2013; HU in 2010-2016, CZ in 2014-2018; LU in 2018-2023; SE in 2023. Unweighted EU average.</p> <p><b>3<sup>rd</sup> graph:</b> Eurostat . Specification: Physicians by medical speciality - historical data (1985-2016). Number of specialized physicians in "hematology", "oncology", "pathology", "radiology" per 100,000 inhabitants in 2015. Data unavailable for CZ, HU, FI, SE, and SK for all specialties; HR and AT for oncology, NL for oncology and hematology. Unweighted EU average.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Mean of the two relative differences in practicing physicians and nurses per 100,000 inhabitants in 2023 (107).</li> </ul>
Diagnostic imaging equipment	<p><b>1<sup>st</sup> graph:</b> Combined data from 2<sup>nd</sup> and 3<sup>rd</sup> graphs; see below.</p> <p><b>2<sup>nd</sup> graph:</b> Eurostat (111). Specification: Devices for medical imaging. By medical imaging techniques (CT, MRI, PET) per 100,000 inhabitants in hospitals and providers of ambulatory healthcare. For CT and MRI: PT data refer to hospitals only; for PET: DE and PT data refer to hospitals only, which may underestimate availability. Unweighted EU average.</p> <p><b>3<sup>rd</sup> graph:</b> Eurostat . Specification: Number of examinations by medical imaging techniques (CT MRI, PET) per 100,000 inhabitants in hospitals and providers of ambulatory health care. For CT and MRI: PT data refer to hospitals only; for PET: PT data refer to hospitals only, which may underestimate examinations. Data unavailable for Ireland and Sweden. Unweighted EU average.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Sum of the number of CT, MRI, and PET scanners per 100,000 inhabitants in 2023 (111).</li> </ul>
Novel cancer medicines	<p><b>1<sup>st</sup> and 2<sup>nd</sup> graph:</b> EFPIA Patients W.A.I.T. Indicator Surveys (114, 150-154). Data refers to rate of availability and estimates of time to availability of new cancer medicines. For most countries, local availability is defined as the inclusion of a medicine centrally approved by the EMA in a national or regional public reimbursement list. Data in 2020-2021 not available for CY, LU, and MT. Unweighted EU average. The year 2020 refers to EMA medicine approvals in 2015-2018; 2021 to 2016-2019; 2022 to 2017-2020; 2023 to 2018-2021; 2024 to 2019-2022; and 2025 to 2020-2023. The EFPIA data only refer to new medicines and not new indications of already approved medicines.</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Reimbursement rate of novel cancer medicines in 2025 (114).</li> </ul>
Radiation therapy machines	<p><b>1<sup>st</sup> graph:</b> Eurostat (111). Devices for medical imaging. Specification: Hospitals and providers of ambulatory healthcare, Radiation therapy equipment, 2013-2023, per 100,000 inhabitants. Radiation therapy equipment includes machines like linacs, Cobalt-60 machines, and brachytherapy machines. Data are unavailable for SE in 2013-2014; NL in 2013-2023; BE and HU in 2018-2023; LV in 2019-2023. For DE, FR, and PT, data refer to hospitals only, which may underestimate availability. Unweighted EU average.</p> <p><b>2<sup>nd</sup> graph:</b> Data sourced from the DIRAC website (123). Population data sourced from Eurostat (124).</p> <p><b>3<sup>rd</sup> graph:</b> Estimates of annual patients requiring radiation therapy were derived from cancer incidence assuming a radiation therapy utilization of 50% and applying a 1.25 retreatment factor (i.e., total radiation therapy courses = 1.25 per treated patient to account for repeat/additional courses); required linac machines were calculated as (incidence × 0.50 × 1.25) / 450 (see Slotman</p>

	<p>et al., 2005) (121). Linac availability data were sourced from the DIRAC website (123). Cancer incidence data were sourced from GLOBOCAN (125).</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Number of linac machines per 450 radiation therapy patients in 2025 (121, 123, 125)</li> </ul>
<b>Survivorship</b>	
Access to holistic services and palliative	<p><b>1<sup>st</sup> graph:</b> EAPC Atlas of Palliative Care (137). Palliative care specialized services per 100,000 inhabitants, p.71. Unweighted EU average.</p> <p><b>2<sup>nd</sup> graph:</b> Data sourced from ESMO website (138). ESMO Accredited Designated Centers. Population data sourced from Eurostat (124).</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Number of specialized palliative care services per 100,000 inhabitants in 2025 (137).</li> </ul>
Access to financial services (“Right to be forgotten”)	<p>Data sourced from the “Ending discrimination against cancer survivors” website (142).</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• National legislation on the RTBF in 2025 (yes = at benchmark) (142).</li> </ul>
Long-term follow-up	<p>Information sourced from the OIL website (145). DPOR recognizes the need to provide access to LTFU care and has established the registry for adolescent and young adult cancers to monitor and evaluate epidemiological data (146).</p> <p><b>For dashboard overview:</b></p> <ul style="list-style-type: none"> <li>• Presence of structured LTFU care in 2025 (yes = at benchmark) (146).</li> </ul>

