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COMMISSION STAFF WORKING DOCUMENT

Review of Europe's Beating Cancer Plan

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1. INTRODUCTION

Europe's Beating Cancer Plan ('the Cancer Plan') was launched on 3 February 2021[1], on the occasion of World Cancer Day. The plan stated that its launch reflected the 'political commitment to leave no stone unturned to take action against cancer' and that it will consider progress and challenges which emerged in the last decades.

The fight against cancer was identified as a political priority in the political guidelines for the Commission mandate 2019 – 2024[2,3] and the Cancer Plan itself was considered to be one of the building blocks of the European Health Union.[4] The European Parliament set up a Special Committee on Beating Cancer in September 2020[5], and published a resolution on strengthening Europe in the fight against cancer in February 2022[6], broadly endorsing the ambition of the Cancer Plan, and calling for stronger EU action on: (i) risk factors, such as tobacco consumption, (ii) wider cancer screening, and (iii) a Cancer-Mission-based[7] effort on cancer research and innovation.

Under the European Health Union, the Cancer Plan announced significant actions to tackle the disease at every stage – prevention, diagnosis, treatment and post-cancer care.[8] The Council Conclusions on the Future of the European Health Union adopted in June 2024 invited the Commission to adopt the legislative proposals and continue the work on non-legislative initiatives laid out in the Cancer Plan, with a focus on determinants of health, including socio-economic and commercial determinants.[9]

The purpose of this Staff Working Document is to present a review of the Cancer Plan from 2021 until the end of 2024 by looking at what has been achieved and the state of implementation of its various actions. This document also seeks to assess whether the actions taken so far and ongoing actions are sufficient to achieve the Cancer Plan's objectives, or whether additional measures are necessary.[10]

The vast majority of the actions announced in the Cancer Plan have been launched since its adoption in 2021. Some of these actions required strong support and action from the Member States as they required either Member State political support (this was the case for Council Recommendations) or direct engagement (as was the case for the creation of

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1 https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2021%3A44%3AFIN.
2 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024_en.
3 https://commissioners.ec.europa.eu/system/files/2022-11/mission-letter-stella-kyriakides_en.pdf.
4 European Health Union - European Commission
5 https://multimedia.europarl.europa.eu/en/topic/beca-special-committee-on-beating-cancer_16504.
6 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022IP0038.
7 https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/eu-mission-cancer_en.
8 As reaffirmed in a Communication from the Commission in May 2024 https://commission.europa.eu/document/download/98c6e4dc-0fc3-4ec6-8ec2-bfcdcb2f018a_en?filename=policy_com-2024-206_en.pdf.
9 https://data.consilium.europa.eu/doc/document/ST-9900-2024-INIT/en/pdf.
10 In line with the review announced in the Communication on Europe's Beating Cancer Plan.

national Comprehensive Cancer Centres and an EU Network of these Centres). This continuous support has provided for full delivery of the Cancer Plan's actions for EU citizens.

The launching of these many actions was a success in itself. But it is clear that most of these actions are long-term in nature and some may take years to reach maturity and show their full effects. That said, some of the launched actions have already had an impact like the EU Network of Youth Cancer Survivors, the European Cancer Inequality Registry or the new EU Cancer Screening Scheme.

This Staff Working Document builds on the key findings of the Study on Mapping and Evaluating the Implementation of Europe's Beating Cancer Plan[11] ('the mapping study') which was commissioned by the Commission. The mapping study included a future-proofing analysis, which assessed the continued relevance of the Cancer Plan given the technological, political and societal developments since its launch. The mapping study also included an analysis of the funding mechanisms, including barriers and gaps. The study used qualitative and quantitative methods. An overview of the methodological approach adopted by the study can be found in Annex 1. The study covers the time frame from the adoption of the Cancer Plan in February 2021 to the conclusion of data collection in December 2023. It covers all EU Member States as well as Iceland and Norway.

This Staff Working Document also draws on evidence gathered from all relevant Commission departments involved in the Cancer Plan's implementation. In this context, the state of play of implementation of the Cancer Plan covers the period up to December 2024.

2. EUROPE'S BEATING CANCER PLAN: CONTEXT AND OVERVIEW

2.1. Cancer as a public health challenge

Cancer is a significant public health challenge in the EU, with an estimated 2.7 million new cancer cases and 1.3 million cancer-related deaths occurring in 2022. It is the second leading cause of death in the EU, and the leading cause of death for men and women aged under 65.[12] Both cancer incidence and mortality are increasing. Due to an ageing population, cancer cases are expected to increase by 18.3% from 2022 to 2040 in the EU, and cancer deaths by 26.3% over the same period. Large disparities in incidence, detection, treatment and survival persist both between and within Member States.[13,14]

Beyond the strain that cancer puts on the everyday lives of millions of people and their families and loved ones, cancer also has considerable economic consequences, estimated

[11] https://data.europa.eu/doi/10.2925/7755915.
[12] https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240507-1.
[13] https://ecis.jrc.ec.europa.eu/en.
[14] https://health.ec.europa.eu/document/download/1e23af78-d146-4c84-be77-690fc6044655_en?filename=2024_healthatglance_rep_en.pdf.

at EUR 100 billion a year in Europe.[15] As the population is ageing and the cancer burden grows, so too does the health expenditure needed to treat cancer. The per capita health expenditure on cancer care is expected to grow by 59% on average in the EU between 2023 and 2050. On average, health expenditure in the EU is estimated to be 4.7% higher in 2050 in real terms than in 2023 due to the fight against cancer. Through cancer's impact on productivity and workforce participation, it is estimated that Member States lose the equivalent of 1.1 million full-time workers per year from cancer.[16]

2.2. Cancer landscape before the adoption of the Cancer Plan and related targets

The following section provides a snapshot of the cancer situation in the EU based on data from before the adoption of the Cancer Plan. It also presents targets and actions proposed under the main pillars of the Cancer Plan to improve the situation.

1. Prevention: With 40% of cancer cases in the EU considered preventable, the Cancer Plan emphasises raising awareness and addressing risk factors.

The Cancer Plan aims to improve **health literacy** by providing tools for healthier choices, promoting education on healthy behaviours and promoting post-cancer care. An evaluation of the impact of the European Code against Cancer on awareness and attitudes towards cancer prevention, adopted in 1987 and most recently updated in 2014, is illustrative. The evaluation showed that 70% of survey respondents in 2017 were aware of cancer prevention guidance in general, but that only between 2% and 21% in the eight studied countries were aware of the Code.[17] By updating the European Code Against Cancer and promoting its messages, the Cancer Plan aims to achieve 80% awareness of the Code and its new evidence-based recommendations by 2025 and thus help more people to reduce their risk of getting cancer.

Tobacco consumption is the leading cause of preventable cancer. 18.4% of EU residents smoked daily in 2019.[18] The Cancer Plan sets a target of having fewer than 5% of EU residents use tobacco by 2040 through stricter control policies and an update of the Council Recommendation on smoke-free environments as well as the revision of further tobacco legislation.

As mentioned in the Cancer Plan, **alcohol**-related harm is another major public health concern in the EU. 8.4% of EU residents over 15 years old consumed alcohol daily in 2019, and 37.2% at least once per week.[19] The Cancer Plan therefore helps Member States to implement best practices to reduce harmful consumption of alcohol.

Promoting **healthy lifestyle habits** can significantly reduce cancer risk.[20] 16% of EU adults were living with obesity 2019[21], with only 32.7% of EU adults meeting physical activity

15 https://health.ec.europa.eu/non-communicable-diseases/cancer_en.
16 https://www.oecd.org/en/publications/tackling-the-impact-of-cancer-on-health-the-economy-and-society_85e7c3ba-en.html.
17 https://www.sciencedirect.com/science/article/pii/S1877782121000151?via%3Dihub.
18 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_sk3e/default/table?lang=en.
19 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_al1e/default/table?lang=en.
20 https://www.mdpi.com/2072-6643/16/6/800#B10-nutrients-16-00800.
21 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_bm1e/default/table?lang=en.

recommendations[22]. The Cancer Plan tackles cancer risks from unhealthy diets and inactivity by reducing food contaminants, promoting healthy eating through incentives, and encouraging physical activity.

Air pollution is also a main driver of mortality. It is linked to 0.5–1% of all cancer cases (2020) and to 7% of lung cancers in Europe (2018), causing 2% of EU cancer deaths (2020).[23] Average exposure to air pollution in the form of particulate matter (< 2.5µm) in the EU was at 12.6 µg/m3 in 2019.[24] To address this problem, the Cancer Plan aims to reduce contaminants in water, soil, and air, in close interaction with the European Green Deal and its Zero Pollution Action Plan.[25]

On **hazardous substances and radiation**, occupational carcinogens caused 8.9 deaths per 100,000 people in the EU in 2019.[26] In 2015 carcinogens accounted for 53% of annual occupational deaths.[27] The Cancer Plan prioritises reducing exposure to carcinogens and work-related cancer through EU-wide directives and strategies.

Some cancers are caused by **infections** and can be prevented through vaccination**.** For example, cervical cancer is related to Human Papillomavirus (HPV) infection, and liver cancer is related to infection with the Hepatitis B Virus (HBV). 51.4% of 15-year-old EU girls had received the recommended doses of the HPV vaccine in 2019.[28] The Cancer Plan promotes the goal of achieving 90% coverage of HPV vaccination among girls and also puts forward the additional goal to significantly increasing HPV vaccination rates among boys, through a Council Recommendation on vaccine-preventable cancers. The Cancer Plan also aims to strengthen Member States' efforts to achieve the World Health Organization (WHO)'s 2030 targets for HBV vaccination coverage in Europe.

2. Early detection: Screening significantly improves cancer outcomes, but participation rates vary widely across the EU. In 2019, 11.4%, 13.7%, and 48.7% of eligible individuals[29] had never been screened for breast[30], cervical[31], and colorectal[32] cancers respectively. The Cancer Plan aims to ensure that 90% of eligible EU residents are offered screenings for breast, cervical, and colorectal cancers by 2025 through the new Cancer Screening Scheme.

3. Diagnosis and treatment: All EU residents should have access to affordable, high-quality cancer care, relying on skilled multidisciplinary teams, timely services, and access to essential medicines and innovation. In 2020, the EU had an average of 0.78 radiotherapy

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22 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_pe2e/default/table?lang=en.

23 https://www.eea.europa.eu/publications/environmental-burden-of-cancer/air-pollution.

24 https://cancer-inequalities.jrc.ec.europa.eu/data-tool-by-country?ind=ESTDPM&ft=TOTAL.

25 https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en.

26 https://cancer-inequalities.jrc.ec.europa.eu/data-tool-by-country?ind=ESTDOCCC&ft=TOTAL.

27 https://osha.europa.eu/en/themes/work-related-diseases/work-related-cancer.

28 https://cancer-inequalities.jrc.ec.europa.eu/data-tool-by-country?ind=HPVVAX&ft=TOTAL.

29 According to the 2022 Council Recommendation on cancer screening, breast cancer screening for women aged 50 to 69 with mammography is recommended, and a lower age limit of 45 years and an upper age limit of 74 years is suggested; cervical cancer screening is recommended for women aged 30 to 65; and colorectal cancer screening for individuals between 50 and 74 years. old.

30 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_pa7e/default/table?lang=en.

31 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_pa8u/default/table?lang=en.

32 https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_pa5e/default/table?lang=en.

machines for every 100,000 people[33], highlighting the need for greater investment in under-resourced Member States. The 'Cancer Diagnosis and Treatment for All' initiative seeks to expand access to innovative treatments, supported by the SAMIRA (Strategic Agenda for Medical Ionising Radiation Applications) Action Plan to improve radiation safety and ensure the availability of radiopharmaceuticals.

4. Quality of life: Survivors of cancer often face challenges like unmanaged treatment effects, poor care coordination, and psychosocial needs. Cancer-related disability-adjusted life years (DALYs) are used as a measure of overall disease burden and expressed as the number of years lost due to premature mortality and years of healthy life lost due to the disease. In 2019, on overage, a person with cancer in Europe lost 3.3 DALYs.[34] Through the Cancer Plan, actions like the 'Better Life for Cancer Patients' initiative and the 2023 SmartCARE project (which aims to roll out a 'Cancer Survivor Smart Card') were launched to address unmet medical and psychosocial needs.

2.3. Set-up of the Cancer Plan

The Cancer Plan is based on four main pillars, covering the whole disease pathway and the areas mentioned above. The four main pillars are: 1) Saving lives through sustainable cancer prevention; 2) improving early detection of cancer; 3) ensuring high standards in cancer care; and 4) improving the quality of life of cancer patients, survivors and carers. Three cross-cutting themes have also been included in the Cancer Plan: 1) fostering new technologies, research and innovation at the service of patient-centered cancer prevention and care; 2) reducing cancer inequalities across the EU; and 3) putting childhood cancer under the spotlight. These seven strands (made up of the four pillars and three cross-cutting themes) contain the specific objectives of the Cancer Plan.

The Cancer Plan encompasses 10 flagship initiatives and 32 further actions, with numerous sub-actions, covering every pillar and cross-cutting theme. It also puts forward a multitude of legislative instruments and other initiatives or projects supported through EU funding. The initiatives and projects include: (i) platforms and databases (to share knowledge and inform policies); and (ii) projects directly implementing the policy priorities as set out in the Cancer Plan.

The intervention logic of the Cancer Plan is summarised in the graphic below:

[33] https://cancer-inequalities.jrc.ec.europa.eu/data-tool-by-country?ind=RADEQ&ft=TOTAL.
[34] https://ghdx.healthdata.org/record/ihme-data/global-burden-disease-study-2019-gbd-2019-reference-life-table.

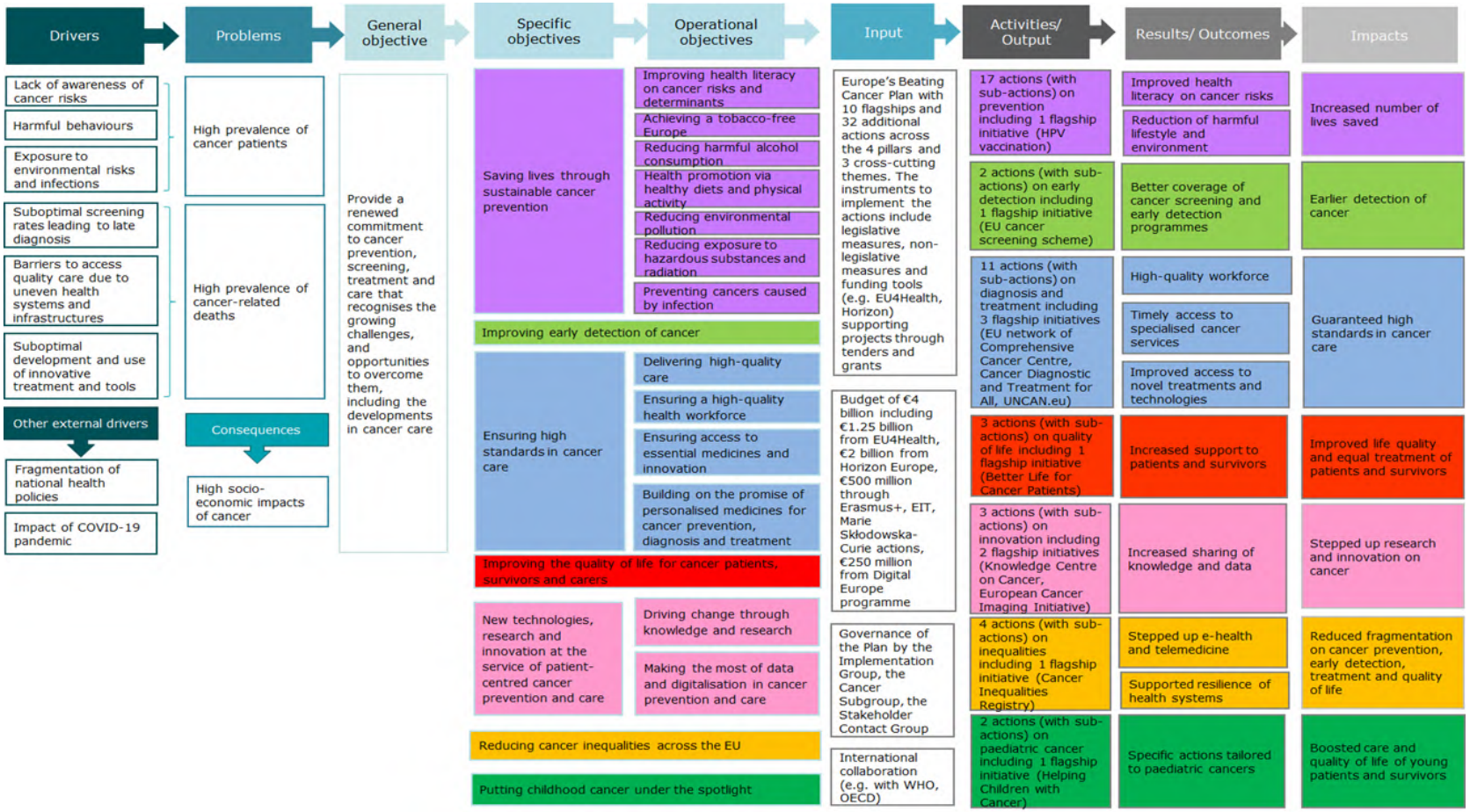

Fig. 1: Intervention logic of the Cancer Plan (see Study on Mapping and Evaluating the Implementation of Europe's Beating Cancer Plan

2.4. Main funding instruments

The EU4Health Programme[35] is the most ambitious EU health funding programme ever. It has an initial allocation of EUR 5.3 billion – roughly 12 times larger than the previous 3rd Health programme.[36] The programme is accessible to all EU Member States and several associated countries (including Norway, Iceland, Ukraine, Moldova, and Montenegro), and prioritises critical health concerns including cancer. EU4Health is complementary to other EU programmes, such as the Recovery and Resilience Facility (RRF), Horizon Europe, Digital Europe, the Cohesion Policy Funds, and the Technical Support Instrument (TSI), in keeping with the so-called health-in-all-policies approach through the diversity of programmes which are involved. Following the mid-term revision of the Multiannual Financial Framework (MFF) in 2023, EUR 1 billion was redeployed from the EU4Health Programme.[37]

Under the EU4Health Programme, a total of EUR 1.25 billion had initially been earmarked to support implementation of the Cancer Plan, as one out of five main strands[38] of the programme. This sum corresponds to 25% of the initial overall budget for the EU4Health Programme for the period from 2021 to 2027. The subsequent overall reduction of the EU4Health budget (2021-2027) by almost 20% and of the remaining budget (2025-2027) by over 35% will require adjustments across the entire health portfolio, including the cancer strand. The budgetary changes over the remaining period will be designed to limit the impact on policy priorities and implementation of legislation and to ensure that the EU4Health Programme can continue as effectively as possible.

35 https://health.ec.europa.eu/funding/eu4health-programme-2021-2027-vision-healthier-european-union_en.

36 This includes administrative lines for subsidy to HaDEA and the support of credits on top of the operational budget. To build up the European Health Union, the EU4Health Programme supported the reinforcement of the mandate of the European Medicines Agency and the European Centre for Disease Prevention and Control with an amount of 0.25 billion.

37 The redeployment enables the EU to continue support for key priorities such as support to Ukraine, for migration and external challenges, for Europe's competitiveness, and to adapt the budget to rising interest rates.

38 The others being Crisis preparedness, Health promotion and disease prevention, Health systems and healthcare workforce, and Digital.

The EU4Health Programme funds projects through grants and procurement contracts. Grants include direct grants to Member States authorities (Joint Actions), direct grants to international organisations or other eligible entities, and action grants from competitive calls for proposals. The procurement contracts are awarded following a call for tenders.

Up to the cut-off date of December 2023 included in the mapping study, four cancer-related **Joint Actions** (JAs) were funded under the EU4Health Programme. As of December 2024, six more Joint Actions have been funded under EU4Health.[1]

A total of 786 eligible applicants for cancer-related **project grants** under EU4Health came from all 27 EU Member States, as well as associated non-EU countries (Norway, Iceland, Ukraine, Moldova, Montenegro) and other non-EU countries not affiliated with the EU4Health Programme but involved as associated partners. Most applications involved consortia rather than individual applicants, with 468 applicants included in successful applications. The diagnosis-and-treatment pillar had the highest number of retained applicants (199), followed by the early-detection pillar (91), the prevention pillar (84), and the quality-of-life pillar (58).

A total of 114 eligible applicants applied for cancer-related **procurement contracts** under the EU4Health Programme, coming from 19 European countries[1], with 26 included in retained applications. Among eligible applicants, 82% were private for-profit organisations, with 17 retained.

The first[39] and second[40] set of Joint Actions, as well as the procurement contracts[41], have achieved all a wide geographic scope of involved countries.

As of April 2024, EUR 531.5 million had been programmed to cancer under the EU4Health programme, EUR 220 million of which have been committed to projects, corresponding to 62 actions (including grants, procurements, contribution agreements with international organisations, administrative agreements with the Joint Research Centre, and framework contracts). Most of these actions contribute to the prevention pillar (49.4%), followed by

[39] These included one JA under Pillar I (JA PERCH - PartnERship to Contrast HPV), none under Pillar II, two under Pillar III (JA CraNE - Network of Comprehensive Cancer Centres; JA JANE - Joint Action on Networks of Expertise), and one under Pillar IV (JA eCAN - focused on eHealth). Some Member States, including Belgium, Greece, Hungary, Italy, Lithuania, Poland, Slovenia, Spain, and Norway, participate in all EU4Health cancer-related JAs. Finland, Iceland, and the Netherlands participate in none, while Denmark, Latvia, and Luxembourg are involved in only one.

[40] These are EUCanScreen, EUnetCCC JA, JANE-2, JAPreventNCD, OriON, and PrISMA. This means that now four Member States and Norway participate in all JAs (Hungary, Italy, Lithuania, Spain), five Member States participate in nine JAs (Belgium, Croatia, Greece, Poland, Slovenia), five participate in eight JAs (Ireland, Malta, Portugal, Romania, Sweden), three participate in seven JAs (Czechia, France, Germany), four participate in six JAs (Cyprus, Denmark, Estonia, Slovakia), three participate in five JAs (Austria, Finland, Netherlands), two Member States, Iceland and Ukraine participate in four JAs (Bulgaria, Latvia), and Luxembourg and Moldova participate in one JA.

[41] Successful tenderers came from Austria, Belgium, Czechia, Denmark, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, and Sweden.

screening (24.9%), treatment (13.9%), quality of life (6.8%), inequalities (4.6%) and others (0.4%). In terms of inequalities, it is important to note that the funding allocated specifically to actions within the inequalities theme does not fully reflect the overall weight of the topic, as inequalities are addressed horizontally across all pillars.

EU Missions are a new way to bring concrete solutions to some of society's greatest challenges, with the ambitious goal to deliver concrete results by 2030. The **EU Cancer Mission** has set the goal to improve the lives of more than 3 million people by 2030 through prevention, cure, and for those affected by cancer including their families, to live longer and better. By joining efforts across Europe with citizens, stakeholders and Member States, the EU Cancer Mission together with the Cancer Plan will provide a better understanding of cancer, allow for earlier diagnosis and optimisation of treatment and improve cancer patients' quality of life during and beyond their cancer treatment.

There is close collaboration of the Cancer Plan and the EU Cancer Mission (the Cancer Mission is funded separately by the Horizon Europe programme and aims to support cancer research). To ensure coherence between cancer policy and cancer research, a total of up to EUR 2 billion from the **Horizon Europe Programme**[42] has been earmarked to contribute to Cancer Plan actions.

Horizon Europe funds projects primarily through grants, as well as procurement contracts. Grants are awarded through highly competitive calls for proposals, whereas procurement contracts are awarded following calls for tenders.

As of December 2024, through calls for proposals **898** cancer-focused projects have been selected for funding under Horizon Europe, for a total amount of **EUR 2.086 billion**. Specifically: **572** projects (64% of cancer-focused projects, corresponding to 32% of the overall budget) were retained for funding under Pillar I, Excellence Science. **119** projects (13% of cancer-focused projects, corresponding to 44% of the overall budget) were retained for funding under Pillar II, Global Challenges and European Industrial Competitiveness. **171** projects (19% of cancer-focused projects, corresponding to 21% of the overall budget) were retained for funding under Pillar III, Innovative Europe. **36** projects (4% of cancer-focused projects, corresponding to 3% of the overall budget) were retained for funding under the Widening Participation and Strengthening the European Research Area instrument.

Within Horizon Pillar II, the Cancer Mission accounts for **61** projects, with a total budget of over **EUR 488 million**.

Supporting the cross-cutting digital strand of the Cancer Plan, EUR 250 million from the **Digital Europe Progamme (DIGITAL)**[43] have been earmarked. The DIGITAL programme aims to promote the digital transformation of Europe's society and economy

[42] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en.

[43] https://digital-strategy.ec.europa.eu/en/activities/digital-programme.

by: (i) providing support to projects in key capacity areas such as supercomputing, artificial intelligence (AI), cybersecurity and advanced digital skills, and (ii) ensuring the wide use of digital technologies across different sectors of the economy, including health. In this context, the DIGITAL programme contributes to all four pillars of the Cancer Plan. In particular, it contributes to the Cancer Plan's objective of harnessing the power of data and digital technologies, including AI, to advance the fight against cancer.

Many of the **DIGITAL** programme-funded actions address digital health more broadly and are not limited to cancer use cases only, although very often include cancer as use cases. The contributions towards the Cancer Plan are therefore both direct and indirect. Beyond the European Cancer Imaging Initiative (EUCAIM project: EUR 36 million, of which 50% co-funded from DIGITAL), significant deployments that will benefit the fight against cancer include: (i) the advanced platform for Virtual Human Twins (EUR 24 million); (ii) the EDITH (Ecosystem Digital Twins in Health) coordination and support action for virtual human twins, in which cancer is one of six use cases (EUR 5 million); (iii) the Genomic Data Infrastructure, in which cancer is one of five use cases (EUR 40 million of which 50% co-funded from DIGITAL); (iv) the Genome of Europe, which is not cancer-specific (EUR 40 million, of which 50% co-funded from DIGITAL); and (v) DIGITAL funding for the Strategic Objective SO1 (High-performance computing). In this context, the EuroHPC (European High Performance Computing) Joint Undertaking supercomputers have supported health and life sciences projects, including cancer imaging activities. In addition, EUR 315 million has been programmed for European Digital Innovation Hubs projects addressing the digital health sector, including cancer.

The EU **Cohesion Policy Funds**[44], and particularly the European Regional Development Fund (ERDF), have also contributed to the fight against cancer across Member States and this is continuing in the current 2021-2027 programming period. EU Cohesion policy invests in health and health research to: (i) ensure equal access to health care; (ii) foster the resilience of health systems, including primary care; and (iii) promote the transition from institutional to family- and community-based care. In the 2021-2027 programming period, investments in healthcare and health services by the Cohesion Policy Funds have amounted to EUR 7.6 billion, under ERDF and Interreg[45] (with healthcare being the largest share of the ERDF funding under the priority *A More Social Europe)*. The ERDF infrastructure investments are also closely coordinated and connected with European Social Fund Plus (ESF+) investments in human capital. This coordinated and integrative approach helps improve equal access to mainstream, non-residential and community-based healthcare services, especially for vulnerable and marginalised groups and those at risk of poverty.

44 https://ec.europa.eu/regional_policy/funding/cohesion-fund_en.
45 https://www.interregeurope.eu/.

Healthcare inequalities, both within and across EU Members States as well as across different socio-economic groups, are particularly evident through the prism of cancer. By making the most of funding from the ERDF, cohesion policy investments support the Cancer Plan objective of reducing inequalities in health outcomes. The ERDF provides funding for the implementation of impactful projects aimed at tackling cancer at various levels. The funded projects cover many areas of the Cancer Plan, such as: (i) improving access to early detection and screening, including modernisation of screening systems; (ii) supporting reforms of health systems, including the establishment of state-of-the-art cancer treatment centres and oncology wards with advanced medical equipment; (iii) developing and investing in telemedicine and eHealth applications and tools; (iv) research and development projects relating to oncology; and (v) promoting healthy lifestyles and nutrition, and others. Cohesion policy also supports research and innovation linked to health, in general, and to cancer, specifically, when related priorities have been identified in the national or regional innovation strategies.

The **Recovery and Resilience Facility**[46] provides a unique opportunity for Member States to strengthen and build resilient health systems. Under the facility, investments in healthcare amount to EUR 42 billion, which corresponds to 6.5% of the total RRF expenditures.

Overall, all 27 Member States have shown a strong commitment to improving health systems by including measures dedicated to healthcare within each of their recovery and resilience plans. This is complemented by 96 reform measures across all Member States. The measures included in the plans contribute to a variety of health objectives, such as the improvement of primary healthcare, the transition from hospital care to outpatient care, the reorganisation of hospital networks, the upscaling of prevention, the increase in the quality of diagnosing and treating patients, the strengthening of the healthcare workforce and the modernisation of healthcare facilities.

Member States have included a wide array of health investments in their recovery and resilience plans. The plans include approximately EUR 28.4 billion in investments in the construction or modernisation of 8 600 healthcare facilities. These investments are complemented by investments in medical devices for the diagnosis and treatment of cancer patients, strengthening overall resilience of the cancer prevention and care system. Some EUR 16 billion in investments in the plan also include primary care or prevention. These investments aim at increasing the allocation for primary care in rural areas and opening of new primary care outpatient clinics in deprived areas, introducing mobile pharmacies offering primary care services, and strengthening the role of general practitioners in primary care.

Member States are adopting and implementing an ambitious reform agenda to complement investments in the healthcare sector. This agenda features reforms to strengthen the resilience of the sector and increase the availability of integrated and high-quality healthcare services. Key reforms focus on re-organising health systems to strengthen their capacity, improving the governance of health systems to increase sustainability of healthcare services, and establishing mechanisms to attract and retain healthcare

[46] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en.

professionals in specific regions. Some recovery and resilience plans include reforms of the management of public health funds and health investment funds.

By the end of 2024, around 40% of the RRP measures have been fulfilled or completed by the Member States and are pending assessment by the Commission.

Member States also relied on the **Technical Support Instrument**[47] to strengthen national cancer prevention and care policies in close alignment with the Cancer Plan. The TSI is an EU programme that provides tailor-made technical expertise to EU Member States to design and implement reforms. The support is demand-driven and does not require co-financing from Member States. Cancer-specific support has been provided for: (i) setting up of accredited comprehensive cancer infrastructures; (ii) improving the governance, implementation and monitoring of population-based cancer screening programmes; and (iii) improving cancer registration systems. Through the TSI, Latvia and Slovakia benefited from technical support in these areas. An ongoing project in Slovenia will support the national authorities in implementing pilot programmes for lung and prostate cancer screening. This project will also help Slovenia to update its cervical cancer screening programme in line with the revised Council Recommendation on cancer screening[48], including by building capacity for economic analyses of the proposed screening programmes.

2.5. Monitoring and governance of the Cancer Plan

To monitor progress made by the Cancer Plan and enable stakeholders to follow the state of play of relevant files, an Implementation Roadmap was published in November 2021. This roadmap has since been updated twice, in January 2022 and February 2024.[49] The roadmap lists all actions and sub-actions included in the annex to the Cancer Plan detailing milestones and key deliverables. It also includes a timeline initially spanning the first five years of implementation (2021 to 2025).

The Cancer Plan has a unique governance structure because it works in tandem with the EU Cancer Mission. Three groups have been set up to help implement the Cancer Plan.

The first of these groups is the **Sub-group on Cancer** under the Expert Group on Public Health[50], which is composed of health and research experts from EU and EEA Member States. The Sub-group's tasks are: (i) to advise the Commission on the implementation of both the Cancer Plan and the EU Cancer Mission; (ii) to inform the Commission about national actions; (iii) to report on challenges related to implementation in the Member States; and (iv) to deliver recommendations on concrete actions.

The second of these groups is the **Beating Cancer Stakeholder Contact Group** on the EU Health Policy Platform[51], which is a discussion and information sharing forum

47 https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/technical-support-instrument/technical-support-instrument-tsi_en.
48 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2022.473.01.0001.01.ENG.
49 https://health.ec.europa.eu/system/files/2022-01/2021-2025_cancer-roadmap1_en_0.pdf.
50 https://health.ec.europa.eu/non-communicable-diseases/expert-group-public-health_en.
51 https://webgate.ec.europa.eu/hpf/.

consisting of the main stakeholders in the area of cancer prevention and care.[52] The overall aim of the group is to support: (i) the implementation of the EU Cancer Plan and the EU Cancer Mission; (ii) the monitoring of the actions of the Cancer Plan and the EU Cancer Mission.

The third of these groups is the **Implementation Group**, which consists of representatives of the relevant Commission services. Its tasks are to monitor and review the Implementation Roadmap and progress indicators, and to update on the implementation of the Cancer Plan and the EU Cancer Mission from their side.

3. IMPLEMENTATION AND LATEST DEVELOPMENTS - FOUR YEARS ON

The implementation of the Cancer Plan is carried out and monitored by the Commission services based on a health-in-all-policies approach, in collaboration with Member States and stakeholders. The following overview presents both: (i) a state-of-play of implementation; and (ii) latest developments in the ten Cancer Plan flagship initiatives and further key actions, up to December 2024. The overview is structured along the four main pillars and three cross-cutting themes of the Cancer Plan. Overall, implementation is well underway, with more than 90% of actions either concluded or ongoing. A more detailed overview of progress in all Cancer Plan actions and complementary initiatives is provided in Annex 2.

This chapter draws on evidence gathered from all relevant Commission services involved in the Cancer Plan's implementation and contextualises this evidence with the results from the mapping study. For the mapping study, a wide range of EU-level stakeholders were interviewed including: (i) EU institutions; (ii) civil society organisations (including NGOs and patient organisations); (iii) healthcare professional organisations; (iv) health industry associations and companies; (v) current and former members of the Cancer Mission board; (vi) academia; (vii) stakeholders from the Beating Cancer Stakeholder Contact Group; and (viii) international organisations.

Stakeholders consulted as part of the mapping study generally welcomed the Cancer Plan. They underlined in particular its **ambitious objectives** and its **comprehensive and innovative approach** to tackling cancer.

3.1. Saving lives through sustainable cancer prevention

Prevention remains the most effective and cost-efficient long-term cancer control strategy. Approximately 40% of cancer cases in the EU are preventable.[53] Benefitting from a whole-of-government approach, **the Cancer Plan aims to raise awareness of and address key risk factors,** such as: (i) smoking; (ii) harmful alcohol consumption; (iii) obesity and lack

[52] The main stakeholders are national cancer societies, non-profit organisations, that are helping cancer patients, and their carers, societies and umbrella organisations for societies working on different types of cancers, on treatment, research, education, and training, different patient groups, specific disease related organisations, universities. The group also includes representatives from national public health institutes, and consultancies representing health interests.

[53] https://www.who.int/activities/preventing-cancer.

of physical activity; (iv) exposure to pollution and hazardous substances; (v) radiation; and (vi) cancers triggered by infectious agents.

Cancers caused by infectious agents (such as Human Papillomavirus, Hepatitis B and C), and the bacterium Helicobacter pylori (H. pylori) account for over 7% of all cases in the EU.[54] Early detection and treatment of these infections - and particularly vaccination against them where possible - are effective prevention tools.

As a flagship initiative, the Commission supports Member States' efforts to strengthen and expand the routine vaccination of girls and boys against HPV to eliminate cervical cancer and other associated cancers (such as vulvar, vaginal, penile and anal cancers as well as some head-and-neck cancers). The goal set in the Cancer Plan is to fully vaccinate at least 90 % of the EU target population of girls against HPV and to significantly increase the vaccination of boys against HPV by 2030. In addition, the Commission is helping to ensure access to vaccination against Hepatitis B in order to boost vaccination uptake and thus help prevent disease caused by HBV, including liver cancer.

A key deliverable of the Cancer Plan is a **Council Recommendation on vaccine-preventable cancers adopted in June 2024**[55], which aims to boost the uptake of both HPV and HBV vaccination among affected population groups. The Recommendation calls on Member States to introduce or strengthen the implementation of vaccination programmes in synergy with other prevention efforts, such as screening. The Recommendation also calls on Member States to improve the monitoring of vaccination coverage rates to improve public health action in the field, including through targeted communication and outreach efforts. The Recommendation represents a major leap forward for the prevention of vaccine-preventable cancers in the EU.

Several EU4Health-funded projects are contributing to achieve the Recommendations' objectives, such as the Joint Action PERCH[56] and the complementary projects PROTECT EUROPE[57] and ReThink HPVaccination.[58] The PERCH Joint Action is: (i) developing communication strategies to support Member States in launching national HPV vaccination actions and campaigns; (ii) promoting the inclusion of HPV into national routine vaccination schedules; (iii) updating knowledge on the efficacy and safety of HPV vaccines; (iv) identifying strategies to purchase HPV vaccines at the lowest possible cost; and (v) improving the data collection and monitoring of HPV vaccination coverage.

The PERCH Joint Action is also working to improve knowledge and awareness both among target communities and healthcare workers to increase vaccination uptake. It is working on this goal with the support of both PROTECT-EUROPE, which is specifically promoting gender-neutral vaccination, and ReThink HPVaccination, which focuses on countries with vaccination uptake below the EU average. Activities within these two

54 https://canceratlas.cancer.org/risk-factors/infection/#:~:text=In%20Europe%2C%202.5%25%20of%20cancers,and%200%25%20to%20other%20infections.

55 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202404259.

56 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/perch_en.

57 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/protect-europe_en.

58 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/rethinkhpvaccination_en.

projects (PROTECT-EUROPE and ReThink HPVaccination) include: (i) training for healthcare professionals on optimising communication with young people and their parents/carers; (ii) providing Member States and relevant civil society organisations with guidance and campaign tools to encourage vaccination; (iii) piloting awareness campaigns and trainings, and (iv) making the findings of the pilots accessible to promote the transfer of best practice to other countries.

A new Joint Action on vaccine-preventable cancers and addressing communicable diseases (HIV/AIDS, tuberculosis, hepatitis) will also contribute to the implementation of the Council Recommendation while also covering other areas. This new Joint Action is expected to kick off at the end of 2025 and will – with indicative EU funding of EUR 20 million – be an unprecedented opportunity for Member States to work together to reduce the cancer burden linked to HPV and HBV.

In addition to this flagship action, there has been good **progress on the prevention of occupational risk factors.** This progress includes the amendment to the Carcinogens and Mutagens Directive[59] in 2022[60], intended to improve the protection of more than 1 million workers in the EU by setting new or revised occupational exposure limits for three important substances (acrylonitrile, nickel compounds, and benzene). The Directive now also offers increased protection against reprotoxic substances, chemicals that may interfere with the human reproductive system or cause developmental toxicity in the offspring. In addition, the EU Strategic Framework on Health and Safety at Work 2021-2027[61] was adopted, which defines the key priorities and actions for improving workers' health and safety, addressing rapid changes in the economy, demography and work patterns, among other things. This framework also sets strong commitments to continue reducing occupational exposure to chemicals. In this context, in November 2023, an amendment to the Asbestos at Work Directive was adopted[62], to reduce the occupational exposure limit for asbestos to at least 10 times lower than the current value.

The EU has made significant progress in reducing **environmental risk factors in the transport sector**. Key steps include the revision of the Eurovignette Directive[63], which requires tolls to be based on vehicles' CO2 emissions, and the Regulation on Alternative Fuels Infrastructure (AFIR)[64], which ensures a minimum infrastructure to support the uptake of alternative fuel vehicles across all transport modes in EU Member States. Furthermore, the EU is promoting sustainable transport options, such as cycling, and a new regulation, CountEmissions EU, aims to provide a harmonized framework for calculating and disclosing transport emissions, enabling consumers to make informed choices about their transport options.

In addition, under the European Green Deal, rules for environmental protection and conservation have been strengthened, further safeguarding human health by **reducing exposure to environmental stressors such as pollution and hazardous substances**. In

59 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02004L0037-20240408&qid=1737990954274.
60 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32022L0431.
61 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0323.
62 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32023L2668.
63 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31999L0062.
64 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32023R1804.

particular, the actions under the Zero Pollution Action Plan include: (i) the revision of the Ambient Air Quality Directives; (ii) the Urban Wastewater Directive; (iii) recast of the Drinking Water Directive; (iv) the Industrial Emissions Directive; and (iv) the update of groundwater and surface water pollutants list and corresponding regulatory standards in Environmental Quality Standards, Groundwater and Water Framework Directives. The second Zero Pollution Monitoring and Outlook[65] will show the progress and assess the perspective on achieving the 2030 pollution reduction targets. Moreover, the Cancer Inequalities Register is including environmental data, where available.[66]

As regards the chemicals legislation, the revised CLP (classification, labelling and packaging of substances and mixtures) Regulation[67] enhances protection by introducing new hazard classes for endocrine disruptors and persistent chemicals. It clarifies labelling, supports online sales, and aids businesses, including SMEs (small and medium-sized enterprises), while improving access to chemical information. In addition, the 'one substance, one assessment' package under the Chemicals Strategy for Sustainability[68] aims to: (i) streamline assessments of chemicals across EU legislation; (ii) strengthen the knowledge base on chemicals; and (iii) ensure early detection and action on emerging chemical risks to further improve the protection of people's health and the environment.

Tobacco continues to be the leading cause of preventable cancers. **The recently adopted Council Recommendation on smoke- and aerosol-free environments**[69] is a key achievement addressing tobacco-associated cancer risks. The Recommendation addresses the changing market situation by seeking to restrict and discourage the use of emerging products such as heated tobacco products and electronic cigarettes, both of which are being heavily marketed to young people. The Commission is supporting Member States in the implementation of the Recommendation through EU funding programmes and collaboration tools including by strengthening research into areas relating to both traditional and emerging products. The Commission is also in the process of conducting a comprehensive evaluation of the overall legislative framework on tobacco control, to support Member States in achieving a Tobacco-Free Generation by 2040.

Most consulted stakeholders suggested further strengthening existing cancer prevention objectives and actions. They said the progress so far in the prevention pillar had been limited, such as in addressing lifestyle factors and in the reduction of tobacco and alcohol consumption.

Stakeholders also emphasised the need for both greater involvement of the general public, especially vulnerable groups, and improved health literacy to address inequalities at their roots. To achieve this, stakeholders recommended tailored primary prevention programmes, considering socio-economic and cultural needs. Stakeholders also stressed the need for public health policies to combat misinformation around vaccination and cancer risks.

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65 https://environment.ec.europa.eu/strategy/zero-pollution-action-plan/zero-pollution-targets_en.
66 https://cancer-inequalities.jrc.ec.europa.eu/environmental-indicators.
67 https://eur-lex.europa.eu/eli/reg/2008/1272/oj/eng.
68 https://environment.ec.europa.eu/strategy/chemicals-strategy_en.
69 https://eur-lex.europa.eu/eli/C/2024/7425/oj/eng.

However, important initial steps have already been taken to either: (i) further study relevant risk factors, where more evidence is required; or (ii) to regulate them, to better protect citizens from exposure. On helping people to take informed decisions on their health, initial actions have also been taken, although it will require more time until it will be feasible to measure any specific impact, such as on tobacco consumption or HPV vaccination rates.

3.2. Improving early detection of cancer

Cancer screening programmes, when organised effectively and quality-assured, can reduce cancer mortality and even prevent certain cancers, by detecting in people without symptoms pre-cancer or cancer in earlier stages, which are easier to treat.[70]

To achieve the objectives of the flagship initiative on a new **EU Cancer Screening Scheme**, the Commission presented in September 2022 recommendations[71], which have been **adopted by the Council on 9 December 2022**[72] on strengthening cancer prevention through early detection.[73]

The adoption marked a milestone in cancer screening policy at EU level, updating the previous Council Recommendation on cancer screening of 2 December 2003[74], which stakeholders said had a remarkable impact on screening policies in Member States[75,76]. A similar impact is to be expected from the 2022 Council Recommendation, with several Member States already aligning their cancer screening programmes according to the new guidance.[77,78,79]

The Recommendation sets the target to invite 90 % of the eligible EU population to breast, cervical and colorectal cancer screening, and suggests that Member States also test the effectiveness and feasibility of cancer screening programmes for lung, prostate and gastric cancer. Together, these six types of cancer make up more than half of cancer cases and cancer deaths[80], so screening for them would result in a significant improvement in public

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70 https://iris.who.int/bitstream/handle/10665/351396/9789289057561-eng.pdf?sequence=1.
71 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0474.
72 See note 48, p. 13.
73 The updated scientific evidence feeding into the Recommendation is based on the Commission's Group of Chief Scientific Advisors' scientific opinion 'Cancer screening in the European Union' (https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/cancer-screening-european-union_en.), which was developed under the Commission's Scientific Advice Mechanism (https://scientificadvice.eu/).
74 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:327:0034:0038:EN:PDF.
75 https://www.ipaac.eu/roadmap/detail/41.
76 https://www.cancer.eu/wp-content/uploads/IJC-2020-EU-Council-Recommendations-Screening-2003.pdf.
77 https://observador.pt/2024/12/09/mais-400-mil-mulheres-terao-acesso-ao-rastreio-gratuito-do-cancro-da-mama/.
78 https://gouvernement.lu/en/gouvernement/martine-deprez/actualites.gouvernement2024%2Ben%2Bactualites%2Btoutes_actualites%2Bcommuniques%2B2024%2B07-juillet%2B01-deprez-depistage-cancer.html.
79 https://www.europa-uomo.org/news/national-prostate-screening-programme-underway-in-czech-republic/.
80 https://ecis.jrc.ec.europa.eu/en.

health through earlier detection of tumours, if screening programmes are successfully implemented.

The Commission is supporting Member States and other stakeholders in implementing the Recommendation. A key instrument in this is the Joint Action EUCanScreen[81], launched in June 2024 with EU funding of EUR 31 million. EUCanScreen brings together 29 countries committed to improving the quality of and expanding their cancer screening programmes. This action aims to address barriers and promote facilitators in cancer screening. It will conduct implementation research to improve more established screening programmes (such as for breast, colorectal and cervical cancer), and facilitate the implementation of newer screening approaches (for lung, prostate and gastric cancer). It is also gathering and disseminating knowledge and resources on: (i) risk-based screening approaches; (ii) the tools of modelling and health technology assessment, and (iii) capacity-building.

The EUCanScreen Joint Action is complemented by three projects which are running dedicated pilot studies across several regions and countries to prepare the launch of organised screening programmes for lung, prostate and gastric cancer. TOGAS[82] is the first of these projects, and focuses on gastric cancer screening, having kicked off in March 2023. The second of these projects is SOLACE[83] for lung cancer screening and the third project is PRAISE-U[84] for prostate cancer screening (both SOLACE and PRAISE-U kicked off in April 2023). For lung cancer for example, the leading cause of cancer deaths in the EU, the cancer screening pilots are looking into increasing the participation of three groups: (i) women, who have been underrepresented in previous studies; (ii) hard-to-reach individuals such as socially deprived populations or ethnic minorities; and (iii) populations with pre-existing conditions such as chronic obstructive pulmonary disease (COPD), who are at higher risk for lung cancer.

To monitor progress and to identify continued challenges, the implementation of the Council Recommendation will be monitored through regular reporting, with the next monitoring report due by the end of 2026. To help in this work of monitoring progress, the EU4Health-funded project CanScreen-ECIS[85] has: (i) refined performance indicators; (ii) developed a data submission portal; and (iii) pilot-tested functionalities of a new data warehouse and web application to be integrated into the European Cancer Information System (ECIS). This work will help to collect, compare and manage screening data to feed into the 2026 report.

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81 https://www.dypede.gr/EUCANSCREEN/.

82 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/togas_en.

83 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/solace_en.

84 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/praise-u_en.

85 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/canscreen-ecis_en.

The Council Recommendation should be implemented considering evidence-based, European guidelines and quality assurance schemes for cancer screening and care, which are updated regularly and therefore ensure that scientific and technological developments are taken into account in a timely manner.

The European Commission Initiative on Breast Cancer[86] has delivered these guidelines and a quality assurance scheme for breast cancer. They have made a decisive contribution by informing the technical annex of the Council Recommendation. The guidelines on breast cancer screening and diagnosis are currently composed of a total of 76 evidence-based recommendations and four good practice statements. The European quality assurance (QA) scheme for breast cancer is a voluntary certification scheme covering the entire care pathway, from breast cancer screening to palliative care. It is the vehicle to implement the guidelines and contributes to ensuring essential levels of quality care, equally accessible across the EU. The QA scheme certification is underpinned by the European legislative framework on accreditation (defined in European Regulation (EC) 765/2008[87]). The QA scheme has been pilot-tested within real healthcare settings, in total by 20 entities including breast cancer services, certification and accreditation bodies and entities from nine Member States, and was subsequently validated by the European co-operation for accreditation.

In addition to the published guidelines and requirements on breast cancer screening and care, those for colorectal, cervical, lung, prostate and gastric cancer are now being developed or starting to be developed.[88,89] The guidelines will be published progressively from 2025 onwards.

Stakeholders consulted for the mapping study underlined that budget restrictions at national level still affected work on cancer prevention and early detection. Consulted industry representatives noted that healthcare spending is less directed to detection and prevention than it is to treatments. Consulted stakeholders also raised several barriers that they said affect the implementation of early detection programmes, with stakeholders underlining some clinical barriers to the early detection pillar and healthcare professionals and civil society organisations also emphasising behavioural barriers that prevent early detection.

Despite these limitations, the actions described above show that, under the impulse of the Cancer Plan, Member States have committed to improve early detection of cancer, and the Commission has made strong progress in supporting Member States in this direction. Resources have been mobilised, both with EU support and at national level, to align the practice and scope of cancer screening programmes in Member States to the new Council

86 https://cancer-screening-and-care.jrc.ec.europa.eu/en/ecibc
87 https://eur-lex.europa.eu/eli/reg/2008/765/oj/eng.
88 https://cancer-screening-and-care.jrc.ec.europa.eu/en.
89 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eucervscreen-qa_en.

Recommendation, displaying its impact and that of the complementary funding having been provided.

3.3. Ensuring high standards in cancer care

High-quality cancer care depends on factors such as: (i) patients' access to specialised cancer services providing optimal and quality-assured treatment; (ii) having a high-quality workforce working in multidisciplinary teams; (iii) access to the latest technologies in cancer care; and (iv) personalised treatment.

To improve timely diagnosis and treatment, the Cancer Plan aims to set up an **EU Network of Comprehensive Cancer Centres** by 2025 to link national multicentric structures that manage all aspects of cancer care, research and specialised medical training. The objective of this initiative is to provide patients with high-quality cancer care, regardless of where they live. From September 2022 to October 2024, the Joint Action CraNE[90] has developed concepts identifying standards, criteria and models to set up the network.

The implementation of these concepts continued in October 2024 and is currently ongoing as part of the EUnetCCC Joint Action[91] (EUR 90 million of EU funding). The first network of its kind, the work to establish an EU Network of Comprehensive Cancer Centres, is a joint effort of all EU Member States, Iceland, Moldova, Norway and Ukraine. More than 160 partners are working together to flesh out all key aspects of the network, including by: (i) launching pilots to set up Comprehensive Cancer Centres in every participating country, tailoring them to national specificities and needs; (ii) developing and applying maturity models for self-assessment and continuous improvement of cancer structures and care networks across the EU; and (iii) launching an EU certification system that will strive to ensure the highest quality of multidisciplinary cancer care, research and education and will also take into account existing certification systems for cancer centres. By 2028, at least 100 Comprehensive Cancer Centres should have joined the network, and 90% of eligible patients should have access to such centres by 2030.

The Cancer Plan also aims to **connect experts in cancer care**. The Joint Action JANE[92] from October 2022 to September 2024, conceptualised seven new cancer related **Networks of Expertise** addressing areas which can benefit from cross-border cooperation. These areas include: (i) complex and poor-prognosis cancers; (ii) palliative care; (iii) survivorship; (iv) personalised primary and secondary cancer prevention; (v) '-omic' technologies[93]; (vi) hi-tech medical resources; and (vii) adolescents and young adults with

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90 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/crane_en.

91 https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43332642/101183407/EU4H?order=DESC&pageNumber=1&pageSize=50&sortBy=title&keywords=comprehensive%20cancer%20centres&isExactMatch=true&frameworkProgramme=43332642.

92 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/jane_en.

93 'Omic' technologies are primarily aimed at the universal detection of genes (genomics), mRNA (transcriptomics), proteins (proteomics) and metabolites (metabolomics) in a specific biological sample.

cancer. These networks of expertise are now being set up, bringing together 25 Member States and four associated countries. The networks of expertise will deliver services and tools, such as: (i) clinical guidelines and recommendations; (ii) public awareness campaigns to empower patients; and (iii) advocacy actions. By promoting research and developing educational initiatives for healthcare professionals and patients, these networks of expertise aim to advance care and overall quality of life for patients (Joint Action JANE-2[94]), which runs from November 2024 to October 2028 with an EU contribution of EUR 40.5 million.

The provision of high-quality cancer care is contingent upon a high-quality multidisciplinary workforce. Patients are entitled to the highest level of care achievable, and healthcare professionals require support to ensure ongoing training and upskilling throughout their professional lives. The INTERACT EUROPE[95] project launched in 2021 **has created an inter-specialty cancer care training curriculum** focused on clinical oncology, surgery, radiology, and nursing services that can be applied to any cancer centre across the EU and beyond. It aims to achieve better performance and patient outcomes through a multidisciplinary approach. Other achievements of the project included the first cohort of trainees and a blueprint that outlines key recommendations and requirements for the delivery of the inter-specialty cancer training programme. A follow-up project[96] plans to implement this curriculum in 100 participating cancer centres across 25 European countries. New training modules will also focus on paediatric oncology and the needs of displaced people with cancer, with a special focus on Ukrainian healthcare professionals and patients.

Preventing and treating cancer as effectively as possible requires a **personalised approach** tailored to the characteristics of the patient and the disease. In this respect, the **Cancer Diagnostic and Treatment for All initiative** aims to use three projects to advance access to cancer treatment by applying genomics and personalised medicine. The three projects focus on: (i) evaluating current standards and providing best practices on genomic diagnostics; (ii) applying cutting-edge technology and genetic profiling of patients; and (iii) implementing targeted treatments for children with acute myeloid leukaemia.[97,98,99]

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94 https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43332642/101183265/EU4H?order=DESC&pageNumber=1&pageSize=50&sortBy=title&keywords=JANE-2&isExactMatch=true.

95 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/interact-europe_en.

96 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/interact-europe-100_en.

97 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/chip-aml22_en.

98 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/canheal_en.

99 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/pcm4eu_en.

Work on personalised medicine is ongoing in synergy with the EU Cancer Mission. The European Initiative to Understand Cancer (UNCAN.eu)[100], another flagship initiative of the Cancer Plan, will improve the use of cancer data from multiple sources by: (i) offering electronic services and training to researchers; and (ii) complementing the European Health Data Space[101] (EHDS) and research infrastructure capabilities. Several preparatory projects to support the creation of UNCAN.eu were launched in 2022, with the aim of: (i) providing access to customised oncology services (CanSERV[102]); (ii) designing new services to accelerate data-driven cancer research (EOSC4cancer[103]); and (iii) preparing a strategic roadmap of the network development (4.UNCAN.eu[104]). Setting up the UNCAN.eu platform is supported by two topics in the Cancer Mission 2024 Work Programme.[105] The thematic group eCancer was created under the Subgroup of Cancer of the Public Health Expert Group to pool expertise from Member States and give advice on the implementation of UNCAN.eu at national level.

The **EU's SAMIRA Action Plan**[106] is an ongoing comprehensive plan to improve the safe, high-quality, and reliable use of radiological and nuclear technology in healthcare. The Plan has three main pillars: (i) securing supply of medical radioisotopes; (ii) enhancing radiation quality and safety in medicine; (iii) and driving innovation in medical radiation applications. The main objectives of the Action Plan are to increase patient access to cancer treatments, maintain global leadership in nuclear medicine, and ensure the EU's autonomy in nuclear medicine. By achieving these goals, the SAMIRA Action Plan is set to improve patient outcomes and contribute to a more efficient European healthcare system.

On cancer care in general, consulted health professionals and civil society organisations stressed the need for: (i) more health care professionals; and (ii) better access to drug treatments, palliative care, and oncology care.

Networking across borders is a key action to tackle some of the challenges in improving cancer care for patients in the EU. Promoting this networking is a key task of the proposed EU Network of Comprehensive Cancer Centres and Networks of Expertise. Networking and learning from each other's experiences, is also a key component of the inter-specialty cancer care training programme, which is already reaching the cancer care workforce and upgrading its skills, ultimately benefiting patients. Moreover, recognising that personalised medicine is crucial in cancer care, the Cancer Diagnostic and Treatment for All initiative

100 https://research-and-innovation.ec.europa.eu/system/files/2021-09/cancer_implementation_plan_for_publication_final_v2.pdf.
101 https://health.ec.europa.eu/ehealth-digital-health-and-care/european-health-data-space_en.
102 https://cordis.europa.eu/project/id/101058620.
103 https://eosc4cancer.eu/
104 https://cordis.europa.eu/project/id/101069496.
105 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-12-missions_horizon-2023-2024_en.pdf.
106 https://energy.ec.europa.eu/topics/nuclear-energy/radiological-and-nuclear-technology-health/samira-action-plan_en.

is advancing cutting-edge technologies across the EU, while the SAMIRA Action Plan is improving cancer care through the safe use of radiological and nuclear technologies.

3.4. Improving the quality of life for cancer patients and survivors

In 2020, 23.7 million people were estimated to be alive after a cancer diagnosis in the EU.[107] The number of people surviving a cancer diagnosis has been growing steadily in the past years, largely due to advances in early detection, treatment and supportive care. One result of these improvements in survival is that people are facing potential new challenges managing their daily lives with and after cancer. These challenges can be of a medical - but also of a psychosocial - nature, and new challenges may also arise, such as potential discrimination against people with a history of cancer by employers or businesses. To handle these challenges, a number of tools are being provided through the Cancer Plan to help cancer survivors better manage their lives.

The **European Cancer Patient Digital Centre (ECPDC)** is one of these tools to help cancer survivors better manage their lives. It is a joint flagship initiative of the EU Cancer Mission and the Cancer Plan. The ECPDC is planned to function as a digital platform providing services to support cancer patients and survivors and facilitate their access to reliable information covering the full spectrum of the cancer journey. Patients will also be able to send their health data to the ECPDC (both clinical data and patient-reported data) for personal use and for consent-based sharing with healthcare professionals, researchers and institutions. The future ECPDC platform will interact with existing EU or national infrastructures by expanding and/or complementing their functions as appropriate.

In 2023, the Cancer Mission supported a preparatory study[108] for the ECPDC platform that resulted in both specifications for the creation of infrastructure to support the platform and suggestions on possible functions that the ECPDC could offer. The study benefited from a broad consultation of potential end-users, including young cancer survivors. As a follow-up, the EU Cancer Mission is supporting the launch of the ECPDC platform with two topics in the Cancer Mission's 2024 Work Programme.[109] Successful consortia in these two topics are expected to start their work mid-2025. Due to the complexity of the proposed model, the actual development and deployment of the platform will take longer than initially anticipated.

The Better Life for Cancer Patients Initiative involves the creation of a **Cancer Survivor Smart Card** and the European Cancer Patient Digital Centre. The SmartCARE project[110] has developed a prototype (mock-up) version of the Cancer Survivor Smart Card using a co-creation approach, in the first developmental phase. It was finalised in December 2024.

[107] https://ecis.jrc.ec.europa.eu/.
[108] https://data.europa.eu/doi/10.2777/78242.
[109] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-12-missions_horizon-2023-2024_en.pdf.
[110] https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/smartcare_en.

The Better Life for Cancer Patients initiative aims to improve the health and well-being of cancer survivors throughout Europe by addressing unmet medical and psychosocial needs.

Two further areas of concern for patients and people who have concluded their cancer treatment are **finance and employment**, in particular for young cancer survivors.

The Cancer Plan supported work on a voluntary stakeholder **code of conduct on cancer patients' fair access to financial services** with the aim to advance the 'right to be forgotten' for cancer survivors in the EU. This would mean that, after a certain period of time following the end of active treatment, providers of financial services providers would not take into account a cancer diagnosis when setting the price, terms and conditions to grant a financial service such as a mortgage and professional loan insurance. Background research was undertaken to inform nine round tables on this issue gathering patients, consumers, healthcare professionals and financial services representatives, all of whom discussed drawing up a draft code.[111] The Commission organised an event in May 2024 taking stock of the progress of the debate so far.[112]

In order to get a clearer picture on challenges in the area of employment, the Commission supported a **study on job retention and return to work for cancer patients and survivors**[113], which was published in October 2024. The study looks at: (i) measures in Member States and EEA EFTA States (Iceland, Liechtenstein and Norway) to help people with a history of cancer to remain in and return to work, (ii) the challenges they face, and (iii) identified best practices in this area.

Some stakeholders consulted at national level emphasised that the current lack of multidisciplinary guidance in cancer care impacts the quality of life of patients and survivors. Some national authorities and healthcare professionals also noted that quality-of-life aspects risked being neglected due to an overemphasis on medical aspects and an underemphasis of psychosocial aspects. In this context, the project STRONG AYA[114] funded under Horizon Europe aims to improve healthcare services, research and outcomes for adolescents and young Adults (AYA) that face age specific issues (e.g. infertility, unemployment, financial problems).

The findings from these activities may help to inform future policies at EU and national level. And with the blueprints created for the ECPDC and the Cancer Survivor Smart Card, the groundwork has been laid for these practical tools designed to directly benefit cancer patients and survivors in their daily lives.

3.5. Reducing cancer inequalities across the EU

The inequalities observed in the cancer burden, in prevention and care are a great concern in the EU. Mortality, incidence and prevalence of risk factors vary greatly both across

111 https://op.europa.eu/en/publication-detail/-/publication/9b7fadb9-ae05-11ef-acb1-01aa75ed71a1.
112 https://health.ec.europa.eu/events/cancer-survivorship-advancing-right-be-forgotten-2024-05-14_en.
113 https://op.europa.eu/en/publication-detail/-/publication/b6dd313d-8528-11ef-a67d-01aa75ed71a1.
114 https://cordis.europa.eu/project/id/101057482.

Member States and within them. There are differences, for example, by sex, age and socio-economic status. Moreover, persistent discrepancies in access to diagnosis and treatment also affect marginalised groups such as persons with disabilities, people with a minority racial or ethnic background, LGBTIQ (lesbian, gay, bisexual, transgender, intersexual and queer) people and people living in poverty. The Cancer Plan aims to tackle these inequalities across the entire disease pathway.

The **European Cancer Inequalities Registry process**[115] **was set up** as a flagship initiative to identify trends, disparities and inequalities between Member States and regions. It provides sound and reliable data[116] through: (i) a Data Tool[117], (ii) a series of Country Cancer Profiles[118] and (iii) overarching analytical reports[119], both of which are produced every two years. By providing these data, the Cancer Inequalities Registry acts as a reporting mechanism on the national situation of cancer prevention and care for the EU Member States, Norway and Iceland. This makes it possible to track progress over time and highlight challenges and specific areas of action to help Member States guide targeted investments and interventions at EU, national and regional level.

The Cancer Inequalities Registry also aims to identify and address data gaps. A survey to collect data on access to cancer care for people with disabilities[120] was launched in 2024 under an EU4Health-funded action on improving access to healthcare for people with disabilities. A similar study addressing vulnerable groups such as Roma and people experiencing homelessness is in preparation. Moreover, the Cancer Inequalities Registry supports the Zero Pollution Action Plan, by integrating data on the impact of environmental risk factors, such as air pollution on cancer burden.

Further supporting the objectives of the Cancer Inequalities Registry are: (i) the Joint Action OriON[121], by making available a mainly qualitative analysis of the national cancer control situation in the Member States, including the state of play of implementation of the Cancer Plan at national level, with a focus on inequalities; and (ii) the EUCanIneq[122] project, which is developing a research and data framework to create indicators of socioeconomic inequality in cancer, integrating these indicators into the Cancer

115 https://cancer-inequalities.jrc.ec.europa.eu/.

116 To provide a comprehensive and up-to-date assessment of inequalities in cancer burden, prevention, early detection, treatment and care, the Registry relies on a range of authoritative data sources. These include, among others, Eurostat, the European Cancer Information System, WHO, OECD health statistics and the International Agency for Research Against Cancer, as well as where available data from national sources.

117 https://cancer-inequalities.jrc.ec.europa.eu/data-tool-by-country.

118 https://cancer-inequalities.jrc.ec.europa.eu/country-cancer-profiles.

119 https://cancer-inequalities.jrc.ec.europa.eu/focus-on-prevention-detection.

120 https://hadea.ec.europa.eu/news/survey-access-cancer-care-people-disabilities-2024-11-08_en#:~:text=The%20study%20started%20in%20August,healthcare%20for%20people%20with%20disabilities.

121 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/orion_en.

122 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eu-canineq_en.

Inequalities Registry, analysing data on total cancer mortality and mortality, and producing country-specific information.

The setting up of the Cancer Inequalities Registry was welcomed by consulted stakeholders, as it provides an EU-wide platform to make those inequalities more visible, making it easier to target potential future action to address these inequalities.

However, most consulted stakeholders called for greater priority to be given to reducing inequalities. Stakeholders indicated that inequalities persisted in many areas of cancer health systems and services. They also stressed that inequalities should be tackled in the area of ageing to ensure equal access to innovation, clinical trials, diagnosis and treatment for older people.

One consulted NGO suggested that the Cancer Plan should seek to promote the creation of environments that make healthy choices the default and discourage unhealthy behaviours. This could help to reduce higher smoking and cancer rates among lower and disadvantaged socio-economic groups.

The Cancer Inequalities Registry has developed into a well-established tool for monitoring these disparities across the whole continuum of cancer prevention and care. The impact of the Cancer Inequalities Registry has been recognised by Member States and other stakeholders, who highlight the usefulness of the data tool, the Country Cancer Profiles and the analytical EU reports, saying these make it possible for them to identify gaps and areas for action to guide policy-making in their own countries. The ongoing expansion of the Cancer Inequalities Registry shows how it is adaptable and able to integrate additional features and formats of information, such as factsheets. This ensures it provides a comprehensive overview of inequalities across the EU, providing ever more targeted and up-to date data to inform policies.

3.6. Putting childhood cancer under the spotlight

The Cancer Plan gives significant attention to childhood cancer as a cross-cutting topic, recognising it as a distinct priority due to the unique challenges it presents. Childhood cancers are rare and have high overall rates of survival, but they remain the first cause of death from disease in children and adolescents in Europe. The European Cancer Information System and the European Cancer Inequalities Registry have both conducted dedicated initiatives to pool, analyse and discuss data on these cancers. These initiatives show that there was an estimated total of 14 000 new cancer cases and 2 000 estimated cancer deaths in children and adolescents in 2022 in Europe. The most common childhood cancers are leukaemia, lymphomas, and brain tumours.

The **Helping Children with Cancer Initiative** ensures that children have access to rapid and optimal detection, diagnosis, treatment and care. It focuses on access to diagnosis and treatment through the new EU Network of Comprehensive Cancer Centres and the new cancer related Networks of Expertise. These networks of expertise can benefit from cross-border cooperation, including in paediatric cancer (focusing on improving healthcare) as

well as in improving the cancer pathway for adolescents and young adults with cancer (from prevention to survivorship).

In addition, an **EU Network of Youth Cancer Survivors[123] has been operational since June 2022** with EU support of almost EUR 5 million. It aims to improve quality of life for survivors of childhood, adolescent, and young adult cancer. These younger cancer survivors can often feel isolated and suffer from anxiety connected to potential relapse. They may also experience gaps in follow-up care and psychosocial support. The EU Network of Youth Cancer Survivors has an online platform that connects patients, survivors and health professionals across the EU, and now enables young people to network, share experiences and find useful and reliable information about cancer. To support this Network, the EU has launched two initiatives under the EU4Health Programme: OACCUs (Outdoor Against Cancer Connects Us)[124], which concluded in June 2024, and the ongoing EU-CAYAS-NET[125] project. In addition, an upcoming Joint Action on Paediatric Palliative Care will help improve paediatric palliative care by reducing inequalities, increasing knowledge, and upscaling access to paediatric palliative care in the EU.

Furthermore, the Network developed two crucial resources: recommendations for mental health and psychosocial follow-up after cancer[126], and guidelines for transition of care for childhood and adolescent cancer survivors.[127] These guidelines aim to help improve care across the disease continuum for when patients transition to adult post-cancer care as they grow older.

Another specific outcome of the EU Network of Youth Cancer Survivors is the youth policy dialogue facilitated by the Commission on 4 February 2025 on World Cancer Day. The aim of this dialogue is for young people aged 16 to 30 who have been touched by cancer or who are healthcare professionals working in the cancer field, to meet Commissioner Várhelyi for an open discussion and exchange of views on cancer care and support for survivors. The dialogue will serve to: (i) discuss how EU health policy and programmes can better serve patients and survivors; and (ii) communicate with cancer patients on how they can be better involved.

Mirroring the Cancer Plan, the **EU Cancer Mission** also prioritises paediatric cancer in all its work programmes. The EU Cancer Mission has launched a dialogue with young cancer survivors, to better understand their specific challenges and needs and co-develop innovative solutions. Four workshops and a conference were organised in 2023 as part of this dialogue, resulting in the launch of a new Horizon Europe research topic in 2024 with an EU budget of EUR 36 million. The new research topic seeks to: (i) better understand

123 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eu-cayas-net_en.
124 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/oaccus_en.
125 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eu-cayas-net_en.
126 https://beatcancer.eu/wp-content/uploads/2024/10/EU-CAYAS-NET-D3.1_readyforupload.pdf.
127 https://beatcancer.eu/wp-content/uploads/2024/08/Summaries-of-Transition-Guideline-_EN.pdf.

and manage the late effects of treatment in adolescent and young adult (AYA) cancer patients and survivors; and (ii) fund a study on the provision of AYA care in Europe, supported by the EU4Health programme

A lack of investment into research on paediatric cancers was highlighted as a problem by national stakeholders. Under Horizon Europe, however, with nearly 25% of the budget so far committed (around EUR 125 million) to addressing cancers in children, adolescents, and young adults with nearly 25% of the budget so far committed (e.g. around EUR 125 million) to addressing cancers in children, adolescents, and young adults, a substantial prioritisation in this area has been undertaken.

The funding commitment to address paediatric cancer, as well as initial actions having been set up under the Cancer Plan and the EU Cancer Mission, show that paediatric cancer is a crucial cross-cutting theme of both initiatives, which will help to fill gaps in knowledge and action.

3.7. A modern approach to cancer: new technologies, research and innovation at the service of patient-centered cancer prevention and care

Two factors are having a tremendous impact on the whole cancer-care continuum: (i) new and emerging knowledge on how cancer develops and how it can be prevented, detected and treated, and (ii) unprecedented advances in technology and digital solutions. The Cancer Plan and the Cancer Mission together foster cooperation in cancer research relevant to patients and the public and makes these research findings available to all relevant stakeholders. Under the DIGITAL Programme, the deployment of new technologies, computing capacities and data infrastructures is funded, which will enable AI-driven research and innovation activities in health, including cancer.

3.7.1. Driving change through knowledge and research

The **Knowledge Centre on Cancer (KCC)[128] was launched in June 2021** as a flagship initiative to foster independent scientific alignment, coordination and support to Commission policies and activities related to cancer.

One main building block of the KCC is the **European Cancer Information System** (ECIS)[129], the system for monitoring and projecting the burden of cancer in Europe. ECIS facilitates the exploration of geographical patterns and temporal trends in incidence, mortality, prevalence and survival data across Europe for the major types of cancer. To fill the gap between real-data availability, ECIS incidence and mortality data updates were delivered bi-annually, and data estimates computed and released for 2020 and 2022 have

[128] https://knowledge4policy.ec.europa.eu/cancer_en.
[129] https://ecis.jrc.ec.europa.eu/en.

been published in the last four years. Accompanying the data releases, 17 factsheets in several languages were published on overall cancer or specific cancers burden.

The KCC also includes: (i) the European Cancer Inequalities Registry (ECIR); (ii) the Health Promotion and Disease Prevention Knowledge Gateway[130], which has strengthened its cancer coverage and since 2021 has published 13 new briefs, including on specific cancers and their determinants; (iii) the European Guidelines and Quality Assurance Schemes for cancer screening, diagnosis[131], out of which the quality assurance scheme for breast cancer services was finalised and endorsed; and (iv) the EU Platform on Rare Disease Registration[132] (EU RD Platform) which continues to onboard and support rare cancer registries. The Knowledge Centre also follows up on Commission initiatives and EU-funded projects and identifies synergies between these initiatives through the Cancer Projects Tool[133], to enhance collaboration and avoid duplication of efforts in the fight against cancer. It also boosts networking activities and informs stakeholders on recent developments in the field through the bimonthly Knowledge Centre on Cancer Newsletter.[134]

Stakeholders emphasised the need for comprehensive data from national cancer registries to enable evidence-based discussions and actions. All but one Member State have cancer registries, but in some countries cancer registries are at risk of closure, while they are crucial for tracking cancer burden, assessing risk factors, and evaluating treatment outcomes. These registries are also key to identifying cancer inequalities and measuring the performance of healthcare systems. However, only around 73% of the EU was covered by cancer registries as of 2022, and data-access challenges remain. Real-world data are also critical, both from cured persons and patients.

Many stakeholders spoke of the problem of inadequate data systems for screening programmes and patient information, partly due to privacy issues, saying that these inadequate data systems hindered research and policy planning. To address this, the European Health Data Space will, once it has entered into force, provide EU citizens access with health data across Member States, supporting research and policy.

3.7.2. Making the most of data and digitalization in cancer prevention and care

To further explore the potential of digital technologies, in particular Artificial Intelligence on cancer treatment, the **European Cancer Imaging Initiative[135] was launched in December 2022**, as another flagship initiative of the Cancer Plan. It works towards fostering innovation and deployment of digital technologies, including AI, in cancer

130 https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway_en.
131 https://cancer-screening-and-care.jrc.ec.europa.eu/en.
132 https://eu-rd-platform.jrc.ec.europa.eu/_en.
133 https://knowledge4policy.ec.europa.eu/visualisation/cancer-projects-tool_en.
134 https://ec.europa.eu/newsroom/know4pol/user-subscriptions/3580/create.
135 https://eu-rd-platform.jrc.ec.europa.eu/_en.

treatment and care, to achieve more precise and faster clinical decision-making, diagnostics, treatments and predictive medicine for cancer patients.

The cornerstone of the initiative is a federated European infrastructure for cancer images data, under deployment by the EUropean Federation for CAncer IMages (EUCAIM) project[136] funded under the DIGITAL Programme. The mission of EUCAIM is to build a pan-European digital federated infrastructure of cancer-related images, which will be leveraged to develop AI tools towards precision medicine in cancer.

The first version of the Cancer Image Europe platform was released in September 2023.[137] By December 2024, further key milestones were achieved, for example a central hub has been set up and the technical validation has been completed. The platform currently links up 57 imaging datasets covering nine cancer types (breast, colon, lung, prostate, rectum, liver, glioma, neuroblastoma, glioblastoma) of over 47,000 subjects. Next steps will be iteration and expansion, making sure features are robust and mature, and more data is included. To invite new institutions to join the initiative, an open call was launched by the EUCAIM consortium in April 2024 with a total of 68 applications. The call under EU4Health Work Programme 2024 further attracted additional stakeholders from an increasing number of countries to contribute to the initiative.

To sustain the platform in the long term, a European Digital Infrastructure Consortium (EDIC)[138] has been identified as a best suited mechanism. To this end, a EUCAIM EDIC Working Group chaired by Spain has been set up in August 2023 in which Member States' representatives work on defining the scope, governance structure and financial model for the EDIC.

Stakeholders highlighted the need to improve collaboration and synergies between research, academia, and industry to better translate discoveries into patient-focused therapies. Regulatory, implementation, and scale-up challenges often limit this potential, and there is a need for more support for both academic-led trials and real-world studies. Interviewees suggested that the Cancer Plan should foster cross-sector partnerships, encouraging cooperation among research, academia, policy, and industry.

Considerable resources have been put into setting up the platforms such as the Knowledge Centre on Cancer and federated infrastructure for cancer imaging (Cancer Image Europe platform) which facilitate such collaboration, underlining the Cancer Plan's and the EU Cancer Mission's commitment to invest in cancer health actions, research and innovation as well as the best use of technologies, underpinning evidence-based cancer policies,

136 https://cancerimage.eu/.
137 https://cancerimage.eu/eucaim-unveils-first-release-of-groundbreaking-platform/.
138 https://digital-strategy.ec.europa.eu/en/policies/edic.

ultimately ensuring that citizens have better access to prevention, screening, treatment and care, and benefit from latest advances and more personalized treatment.

4. CHALLENGES, SOLUTIONS AND LESSONS LEARNED FROM THE CANCER PLAN

This chapter will provide a detailed analysis of the Cancer Plan, examining challenges for its implementation and its relevance in light of recent developments. This chapter will also identify objectives in the Cancer Plan that could be further strengthened. The analysis in this chapter draws on stakeholder perspectives from the mapping study, complemented by observations from the Commission.

4.1. Challenges for the implementation of the Cancer Plan

Some challenges for the implementation of the Cancer Plan have been identified at national and EU level. These challenges include financial, institutional, behavioural and clinical barriers.

Financial barriers are the most reported obstacle to implementing national cancer-related measures. In the mapping study, stakeholders pointed to the rising costs of healthcare services, particularly for anti-cancer measures, which include screening, diagnostic tests, and treatments. National authorities and health professionals emphasised that these increasing costs could significantly impact the financial sustainability of healthcare systems in the future. The Commission provides financial support to Member States to assist with capacity-building initiatives and the implementation of cancer-related measures. One such measure by the Commission is the Joint Action EUCanScreen (for implementation of cancer screening programmes), launched in June 2024 with EUR 31 million of EU funding to: (i) tackle barriers and facilitators in cancer screening; (ii) improve established programmes (for breast, colorectal and cervical cancer); and (iii) support the adoption of newly recommended screening methods (for lung, prostate and gastric cancer).

A lack of specific financial resources allocated for the strategic objectives of national cancer plans was also noted by stakeholders. Budget restrictions in Member States often affected the areas of: (i) cancer prevention; (ii) early detection; (iii) quality of life programmes; (iv) research; and (v) efforts to reduce cancer inequalities. These five areas tended to suffer more from budget shortages than the diagnosis and treatment of patients. Although the Cancer Plan provides strategic guidance and presents key initiatives at EU level, the implementation of national cancer plans, including resource allocation for these national plans, falls primarily under the responsibility of Member States. Nevertheless, the Commission provides support to Member States for the implementation of their national cancer plans through funding mechanisms such as the Cohesion Policy Funds. These aim to reduce cancer inequalities through funding projects covering all pillars of the Cancer Plan (see section 2.4 for more details). Similarly, the Technical Support Instrument has committed EUR 1.4 million for demand-driven reform support in Latvia, Slovakia and Slovenia to date.

The current health infrastructure in some regions was also considered inadequate by some health professionals and civil society organisations that were consulted for the mapping study. These health professionals and civil society organisations identified a pressing need for more workers, updated screening stations, and improved access to drug treatments, palliative care, and oncology services. Insufficient resources and funding could pose significant barriers to improving health infrastructure, confirming the need for greater collaboration and prioritisation at EU level. To help Member States build and maintain infrastructure, Cancer Plan initiatives include: (i) the European Cancer Inequalities Registry; and (ii) other funded projects as well as available EU funding under the Cohesion Policy Funds and the Recovery and Resilience Facility. In addition, the planned EU Network of Comprehensive Cancer Centres aims to link together different national multicentric structures that manage all aspects of cancer care, research and specialised medical training. The goal of the planned network is for 90% of eligible patients to have access to these centres by 2030. In the same way, the Cancer Mission is also helping Member States to develop their research innovation and digital-related capacities into comprehensive cancer infrastructures. Finally, consulted stakeholders indicated a link between the gaps in healthcare staffing, infrastructure, and medicine with financial barriers such as a lack of funding and resources, all of which delay patient care.

Policy and institutional barriers that prevent access to cancer services are multifaceted, involving both a lack of political prioritisation in times of multiple crises and structural deficiencies in the institutional framework. According to some civil society organisations and healthcare professionals, the absence of clear political will regarding national cancer plans in some Member States may affect resource allocation and policy implementation. Importantly, the Technical Support Instrument projects address many issues including governance and standards, thereby tackling many of the policy and institutional barriers.

Stakeholders pointed out a number of structural deficiencies in national institutional frameworks, including a lack of coordination, oversight, collaborative mechanisms, and opportunities for timely action. This lack of collaboration and engagement between institutions and civil organisations may result in a fragmented healthcare system and services. Although the organisation of national healthcare systems is a Member State competence, the EU has supported Member States by developing mechanisms to promote systematic stakeholder collaboration and involvement, including from civil society organisations. These governance structures set up jointly for the Cancer Plan and the EU Cancer Mission are further detailed in chapter 2.5. A positive example of addressing fragmentation are Cancer Plan and Cancer Mission mirror groups, which have been set up in some Member States, such as Belgium.[139] These mirror groups aim to replicate at national level the cross-sectoral and health in-all-policies approach set out by for the Cancer Plan.

Health professionals and civil society organisations raised concerns in the consultation about the **lack of sufficient data and databases** for screening programmes and patient

[139] https://www.beatingcancer.be/.

information, saying that it hindered effective policy planning. They also highlighted issues related to data-privacy conflicts, with directors of healthcare institutions being hesitant to share patient, tumour, and treatment data due to privacy legislation. Limited data sharing between institutions may further hinder collaborative research efforts. The European Health Data Space Regulation will specifically address these types of problems. The Regulation aims to facilitate the safe and standardised sharing of health data across Member States. Once entered into force, the EHDS will empower citizens by ensuring they can easily access their medical information in a common format (the European Electronic Health Record Exchange Format), anywhere in the EU, and share it with healthcare professionals of their choice. This Regulation is also expected to create a groundbreaking legal, organisational and technological framework that facilitates and streamlines the reuse of health data for: (i) research and innovation; (ii) policy making and regulatory activities; (iii) education; (iv) statistics and (v) personalised medicine.

For cancer screening, specifically, the EU4Health-funded project CanScreen-ECIS has contributed to improve the collection and monitoring of data on cancer screening, which will feed into the upcoming EU cancer screening monitoring report.

The Cancer Plan seeks to facilitate the use of health data and digital technologies to foster innovation in cancer care, for example through the European Cancer Imaging Initiative. The EU-funded EUCAIM project is deploying an infrastructure and best practices for usage of cancer imaging data for AI research and innovation. The proposed framework makes it more efficient to conduct multi-country collaborative projects and AI validation studies, in respect of applicable data protection rules. This is done in order to facilitate AI uptake and personalised medicine in cancer. Preliminary steps have been taken to establish EUCAIM as an EDIC as a means to attract Member State engagement for long-term sustainability. By the end of 2024, representatives of eleven Member States were participating in the working group to discuss the potential EDIC establishment.

The EU also aims to strengthen data collection and support cross-border collaboration to help Member States create or manage national registries. Civil society organisations and national authorities consulted for the mapping study underlined the challenges arising from the lack of national cancer registry coverage in certain Member States. This absence of national registries impedes the monitoring of cancer incidence, the ability to inform health policy, and support for research. To overcome these difficulties, key initiatives of the Cancer Plan include the European Cancer Information System, which provides insights into cancer burden indicators and supports the monitoring of trends, thus helping in policy development and resource allocation. The European Cancer Inequalities Registry also identifies gaps and disparities in cancer care, allowing for targeted interventions to be made to reduce inequalities. To support cancer registration, the EU recently launched a direct grant to Member States' authorities (Joint Action) through the EU4Health Annual Work Programme 2024 with a total EU budget of EUR 13 million to support quality improvement of cancer registry data feeding the European Cancer Information System.

The survey responses carried out in the mapping study noted several **behavioural and cultural barriers** that stakeholders said impacted the implementation of national cancer-

related policies across Member States. A key issue brought up was the lack of stakeholder alignment and cultural awareness. Civil society organisations and national authorities also expressed concerns over inconsistent awareness and lack of unified positions on national cancer plans. Cultural differences, particularly in rural regions, could further complicate the adoption of these policies. Knowledge barriers in certain populations also play a significant role, as low health literacy, reluctance to participate in screening programmes, and resistance to lifestyle changes (such as diet and exercise) hamper prevention and early detection efforts.

Conscious of these challenges, the Commission is implementing actions and initiatives to equip individuals with the knowledge and resources necessary to make healthier lifestyle choices. In line with the Cancer Plan, raising EU citizens' awareness of healthy lifestyle choices, cancer risks and prevention will therefore remain a priority. This can be achieved through continuing dedicated information campaigns and initiatives at both EU and Member State level. The European Code against Cancer gives people the information and tools they need to make healthier choices, and the new 5th edition of the Code is expected to be launched by the end of 2025. In addition, with EUR 5 million of EU funding through the EU4Health Programme, calls for proposals were recently launched to increase health literacy on cancer prevention and care. The cancer screening awareness campaign #GetScreenedEU aims to raise awareness among the public of the need for - and benefits of - cancer screening and the EU initiatives in this area, particularly among people from lower socio-economic backgrounds.

Consulted stakeholders also identified resistance to change within healthcare practices. This includes a reluctance among healthcare professionals to: (i) adopt multidisciplinary care approaches; (ii) engage in prevention and home care; and (iii) address palliative care needs. All three of these actions are critical for comprehensive cancer management. Communication issues between healthcare professionals and cancer patients also was identified as a problem, with mixed opinions about the effectiveness of communication and a noted lack of patient-centred care, particularly in rehabilitation and quality of life support. An overemphasis on medical aspects at the expense of psychosocial and holistic care for cancer patients and survivors further exacerbates these challenges.

In order to support national efforts, several initiatives have been launched through the Cancer Plan to: (i) address health professional training including communication between patients and health professionals (INTERACT-Europe) and (ii) through the Joint Actions JANE-1 and 2 to set up a new EU Networks of Expertise addressing palliative care and survivorship. Very recently, with total EU funding of EUR 19.4 million from the EU4Health Programme, calls were launched to address psychosocial support for cancer patients and their carers and paediatric palliative care.

Clinical barriers are another major concern highlighted in the mapping study. Several stakeholders said that there was a potential misalignment between national cancer policies and clinical practices. They also noted that both national and international clinical guidelines are not always adapted to the objectives of national cancer plans. This misalignment may result in challenges in implementation, particularly in non-university

hospitals and rural healthcare facilities. Although this adaptation work needs to be undertaken at national level, the Cancer Plan can provide technical support, such as through peer learning for this purpose (for example through its actions on Comprehensive Cancer Centres (EUnetCCC) and new EU Networks of Expertise (JANE-2)). In addition, Member States can draw on the TSI for targeted technical support including for the adaptation of national cancer plans.

Because the **COVID-19 pandemic** exacerbated already existing challenges, the adoption of the Cancer Plan in 2021 came at the right moment to tackle the identified barriers. Despite the various crises faced by the EU in recent years (including the pandemic, the Russian war of aggression against Ukraine and the ensuing energy crisis, which led to resource reprioritisation) significant progress has been made in implementing the Cancer Plan. This progress will help to address: (i) the impact of delays and disruptions in cancer services; (ii) the increased social inequalities in health; and (iii) the other above-mentioned barriers.

4.2. Relevance of the Cancer Plan in light of both recent developments and evolution of cancer in Europe

The impact of cancer on European healthcare systems is projected to increase in the future, as the number of people diagnosed with cancer has risen by 50% over the last two decades, with an increase in both diagnoses and mortality. Cancer is currently responsible for one in every four deaths in the EU, making it the second leading cause of death after cardiovascular disease. Moreover, the demographic challenge of an ageing population is pressing. It is estimated that the 65+ age group will increase by 34% between 2024 and 2040. Given that this age group has a much higher risk factor for cancer, the European cancer burden is expected to increase by about 38% in terms of new cancer cases and 44% in terms of cancer deaths by 2040.[140]

In spite of the rising incidence of cancer in Europe, recent scientific and technological advance in treatment are improving outcomes and increasing the number of survivors. This is evidenced by the fact that the number of cancer deaths has increased at a much slower pace (by 20%) over the past 20 years than the number of cancer cases (which increased by 50%). In recent years, cancer research and treatment have seen remarkable advance. A wave of innovation has led to increased choices in detection, treatment, and care. This is evident in the growing number of marketing authorisations for oncology drugs in the EU, with nearly 40% of new drugs in development focusing on cancer treatments.[141]

An increasing number of projected cancer survivors means that healthcare systems will also experience an increased burden in providing effective follow-up care. Prevention and early detection initiatives can reduce the cancer burden on individuals and healthcare

[140] https://publications.jrc.ec.europa.eu/repository/handle/JRC133792.
[141] https://www.efpia.eu/media/580501/comparator-report-on-cancer.pdf.

settings, while policies to promote healthier lifestyles and reduce carcinogen exposure can reduce the number of cancer patients most effectively.[142]

In light of these trends, the objectives of the Cancer Plan remain highly relevant. These objectives are: (i) to prevent cancer; (ii) to increase participation in population cancer screening programmes; (iii) to facilitate the early detection of cancer; (iv) to ensure the provision of high-quality healthcare; and (v) to improve the quality of life of patients, survivors and carers.

The Cancer Plan, together with the EU Cancer Mission, has garnered **widespread support from the European cancer stakeholder community**, including research centres, national health authorities (national ministries, agencies, or cancer institutes), NGOs, medical associations, health technology industries, pharmaceutical companies as well as patient associations. All stakeholders interviewed praised the Cancer Plan for its **ambitious goals and comprehensive approach** in addressing all aspects of the cancer continuum. They all regard the Cancer Plan's goals - and its responsiveness to technological, policy and societal challenges - as highly relevant for tackling cancer, as it addresses crucial issues like prevention, detection, comprehensive care and survivorship.

EU cancer stakeholders said that the **flagship initiatives of the Cancer Plan remain relevant** for addressing the full cancer journey. Given the evolution of the disease in the EU, they said that there was a continued need for action at the EU level to address factors that increase the risk of developing the disease. In addition, recent advances in technology support the Cancer Plan's objectives, allowing it to adapt to the evolving landscape of cancer control. The COVID-19 pandemic has also provided important lessons, underscoring the need for adaptable and resilient health strategies, which the Cancer Plan takes into account.

Most stakeholders interviewed during the consultation phase of the mapping study commend the open and flexible nature of the Cancer Plan, which allows countries to address issues based on their specific contexts, making it a valuable tool for diverse healthcare needs across the EU.

Public health NGOs also confirm the Cancer Plan's **alignment with new developments in cancer control**, noting that its focus on prevention, early detection, treatment, and care addresses essential components of cancer management. In particular, the Association of European Cancer Leagues (ECL), a non-profit, pan-European umbrella organisation of national and regional cancer societies from 23 countries, has recognised the Cancer Plan as a means to complement and amplify the impact of national and regional cancer control plans. The ECL has also identified key areas on which the Cancer Plan should work to improve cancer control and care. In addition, the ECL recently praised the Cancer Plan in its 2024 ECL Manifesto[143] for having strengthened the fight against cancer in Europe. The

[142] See footnote 140.

[143] https://www.cancer.eu/wp-content/uploads/2025-05-25_ECL-Manifesto-2024.pdf.

ECL Manifesto also called for continued and effective implementation of its initiatives in the new legislative cycle.

The relevance of the Cancer Plan is also stressed by national authorities. In particular, the 2022 political declaration[144] by the French Presidency of the Council of the EU endorsing the Cancer Plan reaffirmed the commitment of the Trio Presidency (France, Sweden, and Czechia) to combating cancer. The 2022 political declaration also called for the implementation of 32 initiatives on: (i) paediatric cancers; (ii) cancers with poor prognosis; (iii) prevention; (iv) cancer and employment, and (v) international cooperation. The Czech Presidency further supported the need for Comprehensive Cancer Infrastructures, advocated for expanding cancer registries, the recently adopted European Health Data Space, and the new cancer screening recommendations (as seen in the Council Recommendation of 9 December 2022 on strengthening prevention through early detection: A new approach on cancer screening).[145] Significant EU funding support was subsequently allocated to these areas (such as for the Joint Actions EUnetCCC, JANE-2, and EUCanScreen) and similar funding support will also soon be given to cancer registries. In addition, and upon request by individual Member States, targeted technical support is provided through the EU's Technical Support Instrument.

At EU level, the European Parliament resolution of 16 February 2022, titled "Strengthening Europe in the Fight Against Cancer – Towards a Comprehensive and Coordinated Strategy"[146] called for: (i) stronger EU measures to address cancer risk factors, such as tobacco use; (ii) expanding screening programmes, and creating an EU platform to support national screening centres. It also emphasised the need to: (i) improve cancer patients' access to cross-border healthcare and clinical trials; (ii) promote joint procurement mechanisms to tackle shortages in cancer medicines; and (iii) the 'right to be forgotten' for survivors. In addition, it highlighted the importance of: (i) fair pricing and equal access to cancer treatments; (ii) holistic care; and (iii) interdisciplinary cancer research to improve prevention, diagnosis, treatment, and care. Additionally, the resolution recommended: (i) increased funding for cancer research into causes of paediatric and rare cancers; (ii) the integration of European Reference Networks into national healthcare systems; and (iii) the creation of a Knowledge Centre on Cancer. These recommendations align closely with the objectives and flagship initiatives of the Cancer Plan. For example, the establishment of the Knowledge Centre on Cancer reflects this alignment, as it is built on key pillars, including the European Cancer Information System and the European Cancer Inequalities Registry. These initiatives aim to improve the collection of cancer data and strengthen prevention strategies.

The **European Economic and Social Committee** (EESC, a consultative EU body composed of employers, trade unionists and representatives of social, occupational,

144 https://rencontresinca.fr/wp-content/uploads/2022/02/INCA-European-Meetings-2022_@.pdf,
145 https://mzd.gov.cz/wp-content/uploads/2022/06/Call-to-Action_CZ-PRES-Expert-Conference-on-Oncology.pdf.
146 See p. 1, footnote 6.

economic and cultural organisations appointed by the Council of the EU) published an opinion in 2021 on Europe's Beating Cancer Plan, hailing it as a significant milestone in the fight against cancer.[147] The opinion called for a detailed implementation roadmap for the Cancer Plan with clear performance indicators, realistic timelines, and the active involvement of social partners, and civil society organisations. The Implementation Roadmap was published in November 2021, followed by two updates, and stakeholder involvement has been ensured through the Stakeholder Contact Group.

4.3. Additional focus of ongoing and upcoming actions

Most stakeholders who participated in the mapping study shared the view that the **focus now should be on implementing existing actions in the Cancer Plan rather than including new actions**. Despite the early stage of implementation, stakeholders identified certain areas of the Cancer Plan that could benefit from more attention.

One area is **paediatric cancers**, a specific Cancer Plan objective often grouped with other priorities in national cancer plans. Stakeholders in the mapping study and the European Parliament's Beating Cancer Committee (BECA) report both said there was insufficient investment in paediatric cancer research. A panel under the French Presidency of the European Council recommended actions to be taken in this area, such as: (i) accelerating clinical research; (ii) improving follow-up for young survivors; (iii) improved EU data sharing; and (iv) strengthening European structures, including cancer reference networks and coordinated paediatric cancer infrastructure. These four actions recommended by the French Presidency are addressed through ongoing Cancer Plan and EU Cancer Mission initiatives such as: (i) a new network on adolescents and young adults with cancer to be set up under the Joint Action JANE-2; (ii) the EU Network of Youth Cancer Survivors already launched in 2022; and (iii) the development of a Cancer Survivor Smart Card.

Ensuring quality of life for cancer patients and survivors, although an objective of the Cancer Plan, is one of the least covered areas in national cancer plans. Stakeholders pointed to both an overemphasis on medical aspects over psychosocial support and a lack of multidisciplinary care, saying that these two problems resulted in neglecting patients' holistic needs. Certain quality-of-life aspects are addressed: (i) through a recent call for proposals under the 2024 EU4Health Work Programme on the development of social services for psychosocial support and rehabilitation for children and their families in paediatric oncology clinics; and (ii) more generally through plans for the EU Network of Comprehensive Cancer Centres, which will require participating centres to offer multidisciplinary cancer care.

The mapping study showed that stakeholders believed that the shortage of **healthcare workers,** particularly oncologists - worsened by the COVID-19 pandemic - should be addressed to ensure high-quality care and a strong healthcare workforce. Several EU

[147] https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/europes-beating-cancer-plan.

actions currently help Member States to address healthcare workforce challenges as part of the overall effort to build more resilient health systems. These EU actions focus on cross cutting issues and include: (i) the EU4Health-funded actions on health workforce planning (addressed by a Joint Action called HEROES[148]); (ii) shortages of nurses (addressed by an action in collaboration with WHO's Europe Office[149]); and (iii) digital skills, including in cancer care. In addition, the BeWell action[150] supported by ERASMUS+, is building a multi-stakeholder skills strategy for the healthcare workforce with a focus on digital and green skills. The Commission also works through the European Semester[151] to provide policy advice and promote reforms to health systems, including in relation to the health workforce.

Industry representatives raised the issue of **barriers to cancer research and development**, such as bureaucratic hurdles and delays in both implementing innovative techniques and funding medications. To address these challenges, the Lancet Oncology European Groundshot Commission proposed 12 recommendations to reimagine the cancer research agenda for Europe[152], emphasising data-driven strategies and expanded biopharmaceutical research. These recommendations include a focus on prevention, early detection, innovative treatments, and improving the quality of life for survivors.

The Cancer Plan does not specifically address the specific needs of **elderly patients** to ensure treatment, survival, and palliative care, even though Europe's population is ageing and there is a greater prevalence of cancer in those aged 65+. A noted best practice is France's coordination units for geriatric oncology.

Despite initiatives for **rare cancers** (such as the JRC's European Platform on Rare Disease Registration), stakeholders consulted for the mapping study said they believed more focus on rare cancers is needed. For example, the European Parliament BECA report called for more research into rare cancers, with additional funding for the ERNs and their integration into national health systems. The Commission is supporting the 24 ERNs with new direct grants starting in 2024 worth EUR 77.4 million. This will cover their work until September 2027 on consultations, patient' registries, training, and clinical practice guidelines, covering different rare diseases including rare cancers. The Joint Action JARDIN (2024 to 2027) with funding of EUR 18.75 million and involving all EU Member States, Norway, and Ukraine, promotes the better integration of the ERNs into national health systems and the development of national plans for rare diseases. Further investments into rare diseases include: (i) the funding of the Orphanet; (ii) the funding of the five-year ERN evaluation; and (iii) the Clinical Guidelines Project (finished in 2023). Investments in rare diseases made through the EU4Health Programme currently amount to more than EUR 120 million.

148 https://healthworkforce.eu/.
149 https://health.ec.europa.eu/latest-updates/commission-supports-action-across-europe-attract-and-retain-nurses-2024-09-02_en.
150 https://bewell-project.eu/.
151 https://commission.europa.eu/business-economy-euro/european-semester_en.
152 https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(22)00540-X/fulltext.

Research projects funded under Horizon Europe support research on rare cancers, often leveraging expertise from ERNs. For example, the SYNTHEMA[153] and the IDEA4RC[154] projects respectively target rare haematological cancers and rare adult cancers, thus complementing by innovative research the efforts done by the ERNs EuroBloodNet[155] and EURACAN[156]. The research project PREVENTABLE[157] (Cancer Prevention VS Cancer Treatment: the Rare Tumour Risk Syndromes Battle) offers a research insight building upon expertise from members of the ERN GENTURIS.[158]

Stakeholders suggested several options to address **financial barriers** that hold back the achievement of the Cancer Plan's objectives. These options include: (i) better cost-benefit analysis; (ii) budget monitoring for cancer actions; (iii) tapping into EU funds; (iii) public-private partnerships; (iv) seeking donations; (v) approaching charities; and (vi) financial incentives to promote cancer prevention.

Most EU and national stakeholders (healthcare professionals, civil society organisations and industry representatives) agree that **stronger emphasis on implementing, monitoring, and evaluating** the Cancer Plan actions is essential. Half of the Member States have not updated their national cancer plans since the introduction of the Cancer Plan, and many lack monitoring systems to assess their national cancer plans. Although the Cancer Plan sets policy goals, actual implementation relies on Member States, posing challenges due to limited capacity and resources, especially in smaller countries.

Stakeholders said that the funding of national cancer plans was insufficient in some Member States, in areas like prevention, early detection, and quality of life. They also stressed that political obstacles in some countries would further slow the implementation of national cancer plans. Stakeholders also recommended creating multi-stakeholder platforms and national cancer institutes to support these goals. The Cancer Plan Implementation Group and the Sub-group on Cancer work together to: (i) advise the Commission on action; (ii) track progress; and (iii) support the adoption of best practices across the EU. The members of the Sub-group include nominated representatives from Member States Ministries of Health and Research. Both the Commission's Implementation Roadmap and the EU's financial transparency portal provide updates on funding allocations and progress in implementation of the actions. However, smaller organisations may still struggle to keep track of all initiatives and funding opportunities.

5. CONCLUSIONS

Adopted in February 2021 amidst the COVID-19 pandemic and the increasing cancer prevalence and mortality in the EU, Europe's Beating Cancer Plan represents a political commitment to turn the tide against cancer and address the entire pathway of cancer. Four

153 https://cordis.europa.eu/project/id/101095530.
154 https://cordis.europa.eu/project/id/101057048.
155 https://eurobloodnet.eu/.
156 https://www.euracan.eu/.
157 https://cordis.europa.eu/project/id/101095483.
158 https://www.genturis.eu/l=eng/home.html.

years later, this review has found that the Cancer Plan remains highly relevant, and that continuing to implement ongoing actions should be a major focus to achieve the Cancer Plan's aims, as confirmed by the vast majority of stakeholders.

The **implementation of the Cancer Plan is well underway**, and the vast majority of actions have been initiated and are being put into practice. More than 90% of actions have been either concluded or are ongoing, across all pillars and horizontal themes of the Cancer Plan, covering all ten flagship initiatives.

By far the largest number of sub-actions included in the Cancer Plan belong to the prevention pillar (45%), mirroring a **strong commitment to cancer prevention**. Some key achievements in this area include the adoption of the Council Recommendations on vaccine-preventable cancers and on smoke-free environments in 2024. These actions reflect the fact that 40% of all cancers are preventable, and that prioritising prevention not only addresses immediate risk factors but is also the most impactful and cost-effective long-term cancer-control strategy. On the distribution of funding, prevention is the pillar receiving the largest share of cancer funding through the EU4Health Programme (49.3%), as of April 2024.

Flagship initiatives such as the European Cancer Imaging Initiative, the European Cancer Inequalities Registry and the EU Network of Youth Cancer Survivors have been set up and are now operational. These three initiatives are already having an impact by; (i) making large amounts of cancer images and linked clinical data accessible to European clinicians, researchers and innovators; (ii) providing sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions; and (iii) by providing young cancer survivors with a platform to amplify their voices and ensure their needs are taken into account. Preparatory work to launch an EU Network of Comprehensive Cancer Centers, and of seven new Networks of Expertise, has been concluded. Two major Joint Actions[159] have been launched to set up these networks, ensuring access to high-quality care for citizens across the EU. Another Joint Action[160] has been tasked with implementing the 2022 Council Recommendation on cancer screening to make cancer screening more accessible and better aligned with both the latest scientific evidence and highest quality standards. Actions are also either ongoing or currently under preparation to support the implementation of the 2024 Council Recommendation on vaccine-preventable cancers, to make the most of the powerful prevention tool of vaccination.

Implementation of the Cancer Plan continues to be a **concerted effort across policies and sectors**, and this collaborative approach has positioned the Plan as a **successful example of a health-in-all-policies-based initiative**. Two key factors contributing to the Cancer Plan's success are rooted in this team-based approach: Firstly, there is a joint governance mechanism for the Cancer Plan and the EU Cancer Mission, which ensures: (i) coherence between cancer research, innovation and policy; and (ii) regular interactions of all actors

[159] EUnetCCC and JANE-2.
[160] EUCanScreen.

along the whole pathway of cancer. Secondly, there is a broad array of actors involved in implementation and this has led to high levels of engagement on the part of Member States and stakeholders. This engagement is reflected in: (i) the large number of proposals submitted and participants in EU4Health-funded projects; (ii) the broad geographical scope and institutional set-up of these projects; and (iii) the extensive involvement of a high number of Commission departments. More than 20 Commission departments and EU agencies are contributing to the implementation of the Cancer Plan, highlighting the massive collaborative efforts behind this health-in-all-policies approach.

Governance of the Beating Cancer Plan has proved to be efficient so far with several groups (comprising stakeholder representatives, Member State experts and Commission services) providing expertise for the implementation of the Cancer Plan. The Stakeholder Group, which is informed two to four times a year on ongoing activities and convened for discussion as necessary, has been instrumental in giving input during the Cancer Plan's development phase, by replying in high numbers to the roadmap consultation and the more detailed questionnaire. The Stakeholder Group has also stated its needs clearly, and this clear communication has helped to form specific policy actions. The Stakeholder Group is also actively informing itself on ongoing activities and events on the Health Policy Platform. The Sub-group on Cancer, meeting five to six times a year, has been an important source of expertise, for instance, while working on the update of the Council Recommendation on cancer screening, as well as for allowing exchanges among Member States representatives on the progress of implementation of cancer actions at the national level. Finally, the Implementation Group, meeting two to three times a year, has a very significant role for sharing information and providing input within the Commission.

The findings of the mapping study have shown that stakeholders are voicing **widespread support for the Cancer Plan** and consider its **objectives to still be highly relevant**. Stakeholders emphasised: (i) the **high level of ambition in the Cancer Plan;** (ii) its **comprehensive approach** to tackling the whole disease pathway; and (iii) its **responsiveness to recent developments and challenges** at societal, political, and technological level.

Nonetheless**, issues have been identified** and these issues sometimes pose challenges to the successful uptake of the Cancer Plan's actions at national, regional or local level, and their long-term sustainability. Actions the Commission is taking to address these barriers are described in Chapter 4.

The most pronounced issues are: (i) concerns about **financial barriers**, such as rising healthcare costs; (ii) a lack of resources underpinning strategic objectives in national cancer plans; and (iii) imbalances in availability of healthcare professionals and infrastructure between and within Member States. At the healthcare level, consulted stakeholders noted specific **clinical barriers**, for example: (i) a lack of alignment of policies and clinical practice; (ii) a lack of national application - or uneven national application - of international guidelines for specific cancer types; and (iii) the need for stronger inter-professional and multi-disciplinary approaches in cancer care.

Stakeholders said that **policy and institutional barriers** pose additional challenges, in some Member States. These policy and institutional barriers include regional disparities and a lack of coordination between relevant stakeholders and services. These barriers are exacerbated further by the lack of data and potential obstacles to data sharing, which make it more difficult to contribute to and benefit from research and evidence-informed decision-making. Additionally, **behavioural and cultural barriers** were highlighted by stakeholders, namely: (i) lack of awareness or common understanding of the challenges at hand; (iii) lack of awareness and knowledge about interventions in the target populations; (iv) a lack of engagement from healthcare professionals; and (v) insufficient involvement of patient advocates. Finally, stakeholders expressed concern over the potential of pandemics to both disrupt health systems (including cancer care), and disproportionately impact the most vulnerable, as witnessed during the **COVID-19 pandemic**.

The analysed EU projects were qualified by stakeholders as **effectively supporting Cancer Plan implementation on the ground**.

As stated in the mission letter to the Commissioner for Health and Animal Welfare, the Commission will continue its efforts to ensure the implementation of the Cancer Plan in the coming years, including through the evaluation and the revision of the EU tobacco control legislation under the prevention pillar. This effort will not only strengthen cancer control but will also help to prevent other non-communicable diseases by addressing shared risk factors. In 2025, both the planned EU Network of Comprehensive Cancer Centres and the 5th Edition of the European Code Against Cancer informing citizens on how to reduce their individual cancer risk, will be launched. In addition to the published guidelines and requirements on breast cancer screening and care, those for colorectal, cervical, lung, prostate and gastric cancer are now being developed or will start development soon and will be published progressively.

The tools, processes and experiences gained from the development and implementation of the Cancer Plan will be useful for addressing other non-communicable diseases, in particular cardiovascular diseases, mental health disorders, and neurodegenerative diseases. By focusing on prevention, cross-cutting strategies can be adapted to reduce the burden of these diseases, fostering a more efficient response to these growing health challenges.

ANNEX 1: METHODOLOGICAL APPROACH OF THE STUDY ON MAPPING AND EVALUATING THE IMPLEMENTATION OF EUROPE'S BEATING CANCER PLAN

The study aimed to answer specific research questions using qualitative and quantitative methods across the six tasks set out in the bullet points below.

Task 1, **Future-proofing analysis,** aimed to evaluate the Cancer Plan's relevance in light of recent and anticipated technological, political, and societal changes. This task involved laying out the Cancer Plan's intervention logic, linking identified problems, objectives, inputs, related activities, expected results, and long-term impacts. An extensive literature review was conducted, examining academic publications, policy documents, and position papers. The study team also conducted 56 interviews with EU-level stakeholders, including European institutions, civil society organizations, healthcare professionals, health industry associations, Cancer Mission Board members, academics, cancer stakeholder contact groups, and international organisations.

Task 2, **Country analysis,** aimed to map and analyse national cancer strategies along the different areas of the Cancer Plan in the 27 EU Member States, Iceland, and Norway, focusing on: (i) their impacts; (ii) barriers to their efficacy; (iii) their good practices, and (iv) areas for further EU support and coordination. Desk research was conducted to review: (i) national strategic policy documents; (ii) EU/international reports and repositories of measures; and (iii) statistics of key trends using EU and international databases. An online survey was also carried out, collecting data from 82 representatives of national authorities, civil society groups, healthcare professional associations, and health industry associations.

Task 3, **Evaluation of Progress**, aimed to assess the application process and implementation of cancer-related projects funded under the EU4Health Programme. This involved reviewing and analysing the number, type, and geographical distribution of applicants and participants in Joint Actions, calls for proposals, and tenders across the four pillars in the Plan. Additionally, various types of projects were selected for in-depth case studies, supported by desk research and interviews with participating organizations and affected stakeholders.

Task 4, the **Monitoring framework,** aimed to draw up establish a monitoring framework for the Cancer Plan. This involved: (i) defining the scope of the framework; (ii) reviewing existing reporting requirements and data sources through desk research and stakeholder interviews; (iii) conducting a gap analysis; and (iv) developing an outline for the framework. The resulting framework includes output, result, and impact indicators across the 42 actions of the Cancer Plan.

Task 5, **Focus groups and workshops,** aimed to present and discuss emerging findings from the study with experts and stakeholders to collect feedback and refine the analysis. Four online focus groups, running from October 2023 to February 2024, were organized with a panel of eight experts to discuss preliminary results from Tasks 1, 2, 3, and 4.

Additionally, two hybrid workshops were held: the first, in November 2023, presented the results of Tasks 1 and 2, while the second, in April 2024, covered Tasks 3 and 4. Each workshop involved around 100 participants, representing all stakeholder categories consulted in the study.

Task 6, **Synthesis and reporting,** aimed to triangulate and analyse findings from the study's various tasks to answer the study questions and develop robust conclusions and recommendations.

ANNEX 2: IMPLEMENTATION AND LATEST DEVELOPMENTS – DETAILED OVERVIEW

This annex provides a supplementary update on the implementation progress and latest developments of the Cancer Plan up to December 2024, complementing the main text of the Staff Working Document with additional information and insights not otherwise included.

2.1. Saving lives through sustainable cancer prevention

2.1.1. Improving health literacy on cancer risks and determinants

Empowering individuals with knowledge and understanding of risk factors and health determinants is crucial for improving health outcomes, especially for complex diseases like cancer. The Commission aims to address this challenge by implementing actions and initiatives to: (i) equip individuals with the knowledge and resources necessary to make healthier lifestyle choices; (ii) raise awareness; (iii) help Member States to implement best practices; and (iv) promote further research into primary prevention and behavioural change.

The European Code against Cancer is one of the key actions contributing to the reduction of cancer incidence. The Code gives people the information and tools they need to make healthier choices by informing them about actions they can take for themselves or their families and loved ones to reduce their risk of cancer. The current edition of the Code[161], published in 2014, consists of 12 recommendations that most people can follow without any special skills or advice. The more recommendations people follow, the lower their risk of cancer will be. It has been estimated that almost half of all deaths due to cancer in Europe could be avoided if everyone followed the recommendations in the Code[162].

The development of a new 5th edition of the Code (ECAC5)[163] began in 2022, as one of the key initiatives of the Cancer Plan, and is planned to be launched by the end of 2025. The Cancer Plan aims to make at least 80% of the population aware of the Code by 2025. To support the dissemination of the Code, an **EU Mobile App for Cancer Prevention**[164] is being developed to extend the Code's coverage.

In addition, the Commission aims to promote collaboration between stakeholders in this area. For this reason, a project **call to increase health literacy for cancer prevention and care**[165] was launched in June 2024 to: (i) support actions to increase cancer health literacy, (ii) enable citizens to take informed decisions on cancer prevention and screening; (iii)

161 https://cancer-code-europe.iarc.fr/index.php/en/.
162 https://cancer-code-europe.iarc.fr/index.php/en/about-code.
163 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/ecac5_en.
164 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/bumper_en.
165 https://hadea.ec.europa.eu/calls-proposals/eu4health-call-proposals-increase-health-literacy-cancer-prevention-and-care_en.

help patients to be actively involved in cancer treatment; and (iv) help healthcare specialists to communicate cancer-related information in an easy-to understand way.

The **EU Cancer Mission** is also helping to improve primary prevention through awareness raising. In 2024, the Cancer Mission supported a pilot bus roadshow in Lithuania, Poland and Romania, to promote behavioural changes among the general population by raising awareness of both: (i) cancer prevention and screening; and (ii) research and innovation support[166]. The roadshow was launched in Vilnius in May 2024 and continued until mid-September 2024, stopping in five cities in each country. Throughout the roadshow, over 16 800 participants visited the bus and nearly 11 million individuals were reached through the complementary media campaign. Over 200 publications about the roadshow appeared in national and local press and media, and partnerships were set up with 66 different stakeholder organisations (including patient and survivor organisations, healthcare professionals, national, regional and local authorities, etc.) across the three countries.

In the area of research and innovation, the EU Cancer Mission has committed EUR 75 million[167][168] to support nine new research projects in the area of behavioural changes. The 4P-CAN project[169], for example, is aiming to develop a personalised approach to the primary prevention of cancer through citizen participation and digitally enabled social innovation. By understanding barriers to policy implementation and individual adherence to healthy behaviours, the project aims to: (i) improve primary prevention activities; (ii) reduce inequalities in eastern European countries; and (iii) address major modifiable risk factors for cancer.

During the June 2024 meeting of the Expert Group on Public Health, Member States identified their public health priorities, with the prevention of non-communicable diseases identified as a key issue to address at EU level. As a result, the Commission is planning a call in 2025 to identify **best and promising practices related to the prevention of non-communicable diseases.** The overall aim of this call is to help Member States reduce the burden of non-communicable diseases, by promoting synergies between Member States that may ultimately lead to the sharing of best practices across the EU.

2.1.2. Achieving a Tobacco-free Europe

Tobacco consumption continues to be the leading cause of preventable cancer, with 27% of all cancers attributed to tobacco use. By eliminating tobacco use, nine out every ten

166 https://projects.research-and-innovation.ec.europa.eu/en/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/eu-mission-cancer/implementation-page/eu-cancer-mission-roadshow#:~:text=The%20Cancer%20Mission%20Bus%20Roadshow,country%20pages%20to%20learn%20more.

167 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-12-missions_horizon-2021-2022_en.pdf.

168 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-12-missions_horizon-2023-2024_en.pdf.

169 https://4p-can.eu/.

cases of lung cancer could be avoided. The Commission aims to tackle tobacco and nicotine consumption through the EU tobacco control framework and by adapting this framework to new developments and market trends, including additional rules on novel and emerging products. The Commission will continue to prioritise protecting young people from the harmful effects of tobacco and related products.

The Cancer Plan outlines an objective of achieving a Tobacco-free Generation by 2040, by which time only 5% of the EU population would be using tobacco products regularly compared to the 25% that used tobacco regularly in 2021. In order to achieve this goal, the **Tobacco Products Directive**[170] and the **Tobacco Advertising Directive**[171] are currently being evaluated. The evaluation of both Directives is a legal requirement and will inform the next steps under the new Commission.

The obligation to enforce the EU tobacco control framework, including the rules on the cross-border distance sales of tobacco products, falls on Member States according to the Tobacco Products Directive (Directive 2014/40/EU). The Commission provides Member States with the necessary information they need to implement the Directive and assists them in fulfilling their enforcement tasks.

On 29 June 2022, the Commission adopted Delegated Directive (EU) 2022/2100 on the withdrawal of certain exemptions in respect of heated tobacco products[172], a specific category of novel tobacco products. The aim of the Delegated Directive was to address the significant increase in the sales of heated tobacco products in the EU. In addition, the EU tobacco traceability system[51] was extended on 20 May 2024 to include tobacco products other than cigarettes and roll-your-own tobacco.

The Commission remains strongly committed to complying with the EU's international commitments under the **WHO Framework Convention on Tobacco Control** (FCTC)[173], including its Article 5.3 (which contains obligations on transparency). It complies with these commitments by ensuring the transparency of its interactions with representatives of the tobacco industry and protecting the development and implementation of its public health policies from the tobacco industry's interference. This commitment was reflected in the EU statement delivered at the tenth session of the Conference of the Parties (COP10) to the WHO FCTC meeting in February 2024.[174] COP10 achieved some important successes, notably by advancing work to: (i) combat cross-border tobacco advertising; (ii) address the environmental impact of tobacco; (iii) strengthen tobacco industry liability; and (iv) link overall tobacco control to both the human rights agenda and the Sustainable Development Goals.

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170 https://health.ec.europa.eu/system/files/2016-11/dir_201440_en_0.pdf.
171 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:c11571.
172 https://eur-lex.europa.eu/eli/dir_del/2022/2100/oj/eng.
173 https://fctc.who.int/.
174 https://fctc.who.int/convention/conference-of-the-parties/sessions/tenth-session-of-the-conference-of-the-parties.

The Commission also seeks to help Member States fully implement the FCTC to which both the EU and all the Member States are Parties (making the EU and all Member States bound by its provisions, including the obligations on transparency (Article 5.3) and on protection from exposure to tobacco smoke (Article 8)).

Work on the revision of the **Tobacco Taxation Directive** (Council Directive 2011/64/EU on the structure and rates of excise duty applied to manufactured tobacco)[175] is ongoing. The initiative has three main aims, which are set out in the three bullet points below.

- The first aim is to review the minimum tax rates for traditional tobacco products as they have become less effective in recent years in generating revenues helping to reduce tobacco consumption. These tax rates have therefore become less effective in protecting public health. The current outdated framework for the taxation of tobacco is at odds with the EU's objective of creating a tobacco-free generation, where less than 5% of the population will use tobacco by 2040.
- The second aim is to harmonise tax regimes for new products such as heated tobacco products, liquids for electronic cigarettes and other recently developed nicotine containing products that have emerged since the 2011 Directive.
- The third aim is to address concerns over the lack of control of movements of raw tobacco in the EU given the spread of clandestine factories and illicit tobacco production in recent years.

The need to revise the current regulatory framework for tobacco is confirmed by the findings of the evaluation of the Directive[176] followed by the Council conclusions on the review of the Directive[177] inviting the Commission to submit a legislative proposal for its revision. The lack of excise-duty rate (and price) convergence for tobacco products across the EU also creates an economic incentive to shop in Member States with lower tax rates and increases the risk of fraud. Enforcement challenges on the cross-border acquisitions of tobacco by individuals (Article 32 of Council Directive (EU) 2020/262 laying down the general arrangements for excise duty[178]) hamper on Member States' ability to fight fraud and secure revenues, and their ability to set independent public health policies and taxation rates.

As announced through the Cancer Plan, the rules governing **cross-border purchases of tobacco products** need to be revised, to both facilitate the functioning of the internal market while reducing overall tobacco consumption and deter young people from smoking. The Council conclusions on the review of the Tobacco Taxation Directive emphasised that full convergence in excise duty rates and prices on tobacco products is difficult to achieve. These conclusions highlighted the need to revise the rules on general arrangements for excise duty to make them more effective and efficient. Member States also broadly confirm

175 https://eur-lex.europa.eu/eli/dir/2011/64/oj/eng.
176 https://health.ec.europa.eu/tobacco/evaluation-legislative-framework-tobacco-control_en.
177 https://www.consilium.europa.eu/en/press/press-releases/2020/06/02/taxation-council-approves-conclusions-on-future-administrative-cooperation-and-excise-duty-on-tobacco/.
178 https://eur-lex.europa.eu/eli/dir/2020/262/oj/eng.

the added value of EU action and the need to revise the current rules for cross-border purchases of tobacco products.

An external study in 2020, during which workshops with national authorities were organised to collect evidence, was followed by a roadmap and public consultation in 2021. Analysis is also ongoing to revisit the current rules to strike a balance between: (i) the free movement of goods; (ii) the need for Member States to collect fiscal revenues; and (iii) the need to protect public health; and (iv) the need to strengthen the fight against fraud.

2.1.3. Reducing harmful alcohol consumption

As mentioned in the Cancer Plan, alcohol-related harm is a major public health concern in the EU. Alcohol can cause at least seven types of cancer, including the most common cancer types, such as colorectal cancer and female breast cancer[179]. One of the objectives of the Cancer Plan in relation to alcohol consumption is to help Member States substantially reduce alcohol-related harm. To achieve this goal, the Commission is preparing measures that address the accessibility of products (i.e. pricing, taxation and cross-border purchases), information to consumers and the regulation of alcohol advertising.

The Alcohol Tax Rates Directive (Council Directive 92/84/EEC[180]) lays down the **minimum rates of excise duty to be applied on alcoholic beverages**. Above these minima, Member States are free to set their national rates at levels they consider most appropriate for their own circumstances. The objective of these minimum rates is to: (i) support the effective functioning of the single market for alcohol and alcoholic beverages; (ii) support the capacity of Member States to collect revenue; and (iii) to minimise the potential for tax-induced distortions. Alcohol taxation can also contribute to health policy objectives.

Currently, the Alcohol Tax Rates Directive sets a minimum rate of excise duty at EUR 0 for wine and other fermented beverages, and positive minimum rates for beer, intermediate products and ethyl alcohol. Wine, other fermented beverages and intermediate products are taxed according to volume, unlike other alcoholic beverages that are taxed according to their alcoholic strength. However, the market is evolving. Consumption patterns are changing, and new industrialised wine or ready-to-drink alcoholic beverages are appearing. To reflect these changes, a thorough **evaluation of the Alcohol Tax Rates Directive** is needed and was announced in the Cancer Plan. The evaluation will serve as a basis to start discussions with Member States on the way forward. The evaluation will assess the performance of the Directive against the evaluation criteria of effectiveness, efficiency, relevance, coherence and EU added value and will serve as a basis for future policy action.

[179] https://www.who.int/europe/news-room/04-01-2023-no-level-of-alcohol-consumption-is-safe-for-our-health.

[180] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31992L0084.

The revision of the rules governing **cross-border purchases of alcohol products** and particularly on excise duty (Article 32 of the Alcohol Tax Rates Directive) is ongoing. The revision initiative was announced in the Cancer Plan with the aim of helping to reduce harmful alcohol consumption, and in particular deter young people from abusive alcohol consumption.

An external study had been conducted in 2020 including workshops with national authorities. Stakeholders had the opportunity to provide feedback on an evaluation roadmap a public consultation in 2021. Further analysis is needed to find a proper balance between safeguarding the free movement of goods, whilst securing fiscal revenues for Member States, ensuring the protection of public health and strengthening the fight against fraud.

The work on the revision of the **Council Directive on the minimum rates of excise duty to be applied on alcoholic beverages**[181] is ongoing.

The **Audiovisual Media Services Directive** (AVMSD) covers tobacco and related products, but also provides a specific set of rules aimed at reducing harmful alcohol consumption. Notably, the AVMSD requires that audiovisual commercial communications for alcoholic beverages must not encourage immoderate consumption of such beverages and must not be aimed specifically at minors. In addition, the AVMSD also encourages the development of self-regulation and co-regulation of inappropriate audiovisual commercial communications for alcoholic beverages, particularly to reduce the exposure of minors to alcohol advertising.

The Cancer Plan calls for a proposal to introduce **health warnings on labels of alcoholic beverages** for which a robust evidence base is necessary. The EVID-ACTION[182], a collaboration with the WHO Europe, is providing support to Member States on health literacy, including health warnings, screening and brief interventions related to alcohol use in various settings.

On the **labelling of the list of ingredients and nutrition declarations on alcoholic beverage products**, Regulation (EU) 2021/2117 of the European Parliament and of the Council[183] amending among others the Common Market Organisation Regulation, was adopted in December 2021. Regulation (EU) 2021/2117 requires an ingredient list and nutrition declaration to be affixed to grapevine products and aromatised wine products. It is applicable from 8 December 2023, except for wine produced before that date. The amending regulation allows this information to be presented either on a label attached to the package or by electronic means identified on the package or the physical label, with the exception of the energy value which must always be provided on the package or on a

181 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:l31023.

182 https://www.who.int/europe/news-room/events/item/2023/11/22/default-calendar/youth-voices-in-alcohol-policy--launch-of-the-who-eu-evidence-into-action-alcohol-project-(evid-action)-youth-alcohol-network.

183 https://eur-lex.europa.eu/eli/reg/2021/2117/oj/eng.

label attached to it. The beers and spirits' sectors signed in 2019 two Memoranda of Understanding concerning lists of ingredients and nutrition declarations, which are currently being implemented. The spirits' sector provides the energy value on labels and the list of ingredients via a digital label[184], while the beer sector voluntarily provides both types of information on the label.[185]

EU funding also supports research in the field of evidence-based brief interventions. One example of this research is the GENIAL project[186], which started in 2023 and is currently exploring the determinants of alcohol-related hepatocellular carcinoma.

2.1.4. Improving health promotion through access to healthy diets and physical activity

Cancer risk is heightened by the twin effects of unhealthy diets and physical inactivity. On nutrition, the EU's work focuses on further reducing the presence of carcinogenic contaminants in food and setting maximum levels for more of these contaminants, based on the latest available scientific evidence. The Cancer Plan also focuses on measures to: (i) make healthy foods more available; (ii) explore with Member States tax incentives to increase the consumption of healthy foods; (iii) improve consumer information and health literacy; and (iv) address the marketing and advertising of products linked to cancer risks.

As an initial step, food needs to be free from harmful substances. On reducing the presence of **carcinogenic contaminants in food**, the EU adopted maximum levels for cadmium, lead, ochratoxin A, dioxins and dioxin-like polychlorinated biphenyls (PCBs) and inorganic arsenic (food of non-marine origin). Discussions are still ongoing on the setting of (additional) maximum levels for acrylamide, dioxins and PCBs, glycidyl esters, 3-MCPD esters and mineral oil hydrocarbons.

Regular exercise and engagement in sport is crucial for staying physically and mentally fit. Sport activities help tackle weight and obesity issues and play an important role in preventing or reducing the impact of other non-communicable diseases[187]. In order to encourage the development of effective policies in the Member States, the Commission works together with the WHO Europe on implementing the Council Recommendation[188] on promoting health-enhancing physical activity (HEPA) across sectors[189].

Several initiatives in the Cancer Plan have focused on promoting healthy lifestyles in young people. A study examining the progress of the **EU Action Plan on Childhood Obesity 2014-2020**[190] was launched in August 2023 and is currently being finalised, with expected publication of findings in 2025. The objectives of the study were to: (i) evaluate

184 https://spirits.eu/upload/files/publications/CP.MI-098-2019-MoU-Final%20Version%20on%20website%20without%20signature-%204%20June%202019.pdf.
185 https://brewersofeurope.eu/our-priorities/labelling/.
186 https://genial-project.com/.
187 https://www.who.int/health-topics/physical-activity.
188 https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=celex%3A32013H1204%2801%29.
189 https://sport.ec.europa.eu/policies/sport-and-society/physical-activity-and-health.
190 https://health.ec.europa.eu/system/files/2016-11/childhoodobesity_actionplan_2014_2020_en_0.pdf.

the progress of the Action Plan; (ii) provide an overview of the efforts carried out by Member States to address the Action Plan's key areas; and (iii) provide an overview of ongoing and planned actions on childhood obesity. In addition, the study aimed to (i) identify obstacles and remaining challenges, and (ii) to collect best practices on policy approaches to promote healthy diets or physical activity from a young age. Findings from the study will inform Member States and the Commission on the possibility for future actions.

The **HealthyLifestyles4All initiative**[191] was a two-year initiative that aimed that aimed to link sport and active lifestyles with health, food and other policies to promote healthy lifestyles for all, across generations and social groups. The initiative included three Pillars aiming to: (i) increase awareness around healthy lifestyles; (ii) facilitate access to sport, physical activities and healthy diets; and (iii) developing a holistic approach to health, food, well-being and sport. Between 2021 and 2023, the initiative attracted 103 pledges, 21 of which came from Member States. To mark the end of the initiative, the Commission published a Mapping document on Healthy Lifestyles[192]. The document contains the main results of the HealthyLifestyles4All initiative as well as a guide including 15 funding sources for stakeholders wishing to implement projects in the field of healthy lifestyles.

Several projects addressing healthy lifestyles at schools have been funded: RYHEALTH[193],which is focusing to learn and adopt healthy and sustainable behaviours in primary and secondary school students, Schools4Health[194] aiming to work with schools to analyse, implement and evaluate good practices in the fields of healthy nutrition, physical activity and mental health, and IHLGIS[195] addressing the health and wellbeing of people with intellectual disabilities across Europe.

Through the **EU school scheme**[196], children benefit from the distribution of fruits, vegetables, milk and milk products at school. The scheme is currently under revision to increase the amount of healthy foods available to children and improve their understanding of the benefits of healthy food.

To support policy makers in the field of health, **the Health Promotion and Disease Prevention Knowledge Gateway**[197], is a pillar of the Knowledge Centre on Cancer[72]. The Gateway acts a reference point to provide reliable, independent and up-to date information on topics related to: (i) healthy diets; (ii) physical activity; (iii) the promotion of health; and

191 https://sport.ec.europa.eu/healthylifestyle4all.
192 https://op.europa.eu/en/publication-detail/-/publication/3c4366d4-89b5-11ee-99ba-01aa75ed71a1/language-en.
193 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/ryhealth_en.
194 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/schools4health_en.
195 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/ihlgis_en.
196 https://eur-lex.europa.eu/eli/reg/2013/1308/oj.
197 https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway_en.

(iv) the prevention of cancer and other non-communicable diseases. In addition to providing this information to policymakers, the Commission is also spending EUR 76 million under the EU4Health 2022 annual work programme to support: (i) the implementation of prevention policies; and (ii) collaboration between Member States on addressing non-communicable diseases and their health determinants. Under the **Joint Action PreventNCD**[198], (running from 2024 to 2027) 22 Member States plus Norway, Iceland and Ukraine are collaborating to develop and implement comprehensive prevention policies to reduce the burden of cancer and other non-communicable diseases and address their risk factors, including diets and nutrition. Several project grants addressing cancer and non-communicable disease prevention have been working together to support the PreventNCD Joint Action: (i) PEACHD[199], addressing cancer prevention through lifestyle risk factors; (ii) ELISAH[200], with the focus on reducing the burden of breast cancer by acting on modifiable risk factors; (iii) FILTERED[201] aiming to stimulate collaborative advocacy, health promotion, action, and accountability for the prevention of non-communicable diseases; and (iv) Showup4health[202], addressing social and environmental health determinants in vulnerable groups.

The Commission is also making the most of legal instruments to promote healthier food choices by providing useful information to consumers. Limiting the advertising of unhealthy food and drinks targeting children is also one of the objectives of the **AVSMD**. Notably, the Directive encourages the development of self-regulation and co-regulation to reduce the exposure of children to audiovisual commercial communications about food and beverages that are high in fat, salt and sugar.

The review of Regulation (EU) No 1144/2014 is paused to allow the new Commissioner for DG Health and Animal Welfare to assess and consult with stakeholders, in line with the commitments made by President von der Leyen in her Political Guidelines. The Commission's annual work programme outlines objectives that align with policy goals, such as contributing to the Cancer Plan. In 2019, prioritising the promotion of fruit, vegetables, and EU organic products within healthy diets was established. This focus is reflected in a dedicated budget for these foods in the annual work programme, continuing in 2025. Strict legal provisions ensure health-related information meets Regulation (EC) No 1924/2006 or gains approval from the relevant national authority. Additionally, promotion materials for the internal market must reference the Food Based Dietary Guidelines (FBDG) of the targeted Member States.

198 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/ja-preventncd_en.

199 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/peachd_en.

200 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/elisah_en

201 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/filtered_en.

202 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/showup4health_en

Front-of-pack nutrition labelling is one of the tools used to inform consumers on the nutrient content of food. As allowed by Regulation (EU) 1169/2011 on the provision of food information to consumers, several Member States are currently recommending voluntary national front-of-pack nutrition labelling schemes. The Commission will continue to work with Member States and stakeholders to provide solutions to facilitate healthier food choices. Communication campaigns at national level can better target consumers, and the Commission will therefore support Member States' efforts to improve consumer awareness of food information.

The Joint Action Best-ReMaP[203] (Reformulation, Marketing and Public Procurements – Best-ReMaP) was an EU-wide initiative funded under the third EU Health Programme. It was a three-year project (running from October 2020 to September 2023) that involved Member States in scaling up and reviewing dietary and nutritional policies, with a special focus on children and fairness in health. The project delivered three frameworks for action in the areas of food reformulation, regulating the marketing of unhealthy foods to children, and public food procurement. Its results have been transferred into the new Joint Action PreventNCDs to ensure synergies across relevant initiatives.

The **EU Code of Conduct on Responsible Food Business and Marketing Practices**[204] was launched in July 2021. It was drafted by a wide range of agri-food stakeholders, with the support of the Commission, and includes a set of seven aspirational objectives, each with specific targets and a list of indicative actions. The first aspirational objective of the Code is focused on healthy, balanced and sustainable diets for all European consumers. The Code has 146 signatories making voluntary commitments, including more than 90 commitments to enable access to healthy diets.

2.1.5. Reducing environmental pollution

According to the European Environment Agency (EEA), approximately 10% of the cancer burden in Europe is attributable to environmental factors[205]. Exposure to air pollution, residential radon, chemical carcinogens, UV radiation, asbestos and other risks contributes to a significant proportion of cancers in Europe. By reducing and cleaning up pollution and fostering health-promoting behavioural changes, these cancer risks can be significantly reduced. Such prevention-based approaches can ultimately lead to a decrease in the number of cancer cases and related deaths.

The **Zero Pollution Action Plan** is one of the key components of the European Green Deal, and aims to reduce pollution to levels that are no longer considered harmful to health and natural ecosystems, and that respect planetary boundaries, thereby creating a toxic-free environment. It includes targets such as reducing the number of premature deaths caused by air pollution by 55% by 2030 (as compared to 2005 levels) and lists actions to

[203] https://bestremap.eu/.
[204] https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/sustainable-food-processing/code-conduct_en.
[205] https://www.eea.europa.eu/publications/environmental-burden-of-cancer.

address pollution in water, the air and soil. Nine flagships and 33 legislative and non-legislative actions were set out in the Action Plan which are now largely implemented[206]. It included a flagship on "reducing health inequalities through zero pollution" which introduced pollution monitoring and outlook data in the Cancer Inequalities Registry and the Atlas of Demography to help target interventions at EU, national and local level and to enable people to compare how much pollution affects their health.

In October 2022, the Commission adopted proposals to: (i) revise the **Ambient Air Quality Directives** and the **Urban Waste Water Directive**; and (ii) update the list of **groundwater and surface water pollutants** and corresponding regulatory standards in the Environmental Quality Standards, Groundwater and Water Framework Directives[207]. The Commission is proposing to add pollutants of emerging concern such as per- and polyfluoroalkyl substances (PFAS) and microplastics to the water pollutants list under the EU's water legislation *acquis*. In November 2024, the revised Urban Wastewater Treatment Directive[208] was adopted and, to support its implementation, the Commission was empowered to develop more requirements to put in place harmonised implementation approaches. These Directives also concern pollutants such as PFAS and microplastics[209]. On air quality, the revision aligns the standards with the WHO recommendations, ensures a regular review of the air quality standards, improves the legal framework, and supports local authorities in achieving cleaner air.

In addition to the actions outlined above, it is worth considering other relevant measures, including in relation to drinking water, industrial emissions, and mercury. The recast Drinking Water Directive[210] entered into force in January 2021. It considers revised limit values for pollutants and addresses contaminants of emerging concern, including PFAS and microplastics, therefore guaranteeing further protection of human health by reducing potential exposure of EU consumers to pollutants. In April 2024, the revision of the Industrial Emissions Directive[211] was adopted, which further minimised the impact of pollution on people's health and the environment by reducing harmful industrial and intensive livestock emissions across the EU. In June 2024, the revised Mercury Regulation[212] was adopted, prohibiting the last intentional remaining uses of mercury in the EU and contributing to the zero-pollution objective of a toxic-free environment. It represents a breakthrough in the safeguarding of human health, with clear environmental benefits.

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206 https://environment.ec.europa.eu/strategy/zero-pollution-stakeholder-platform/actions_en

207 https://environment.ec.europa.eu/publications/proposal-amending-water-directives_en.

208 https://eur-lex.europa.eu/eli/dir/2024/3019/oj/eng.

209 In addition, a restriction of the whole PFAS group, proposed by five national authorities under the REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) regulation, is now under the assessment of the European Chemical Agency and the Commission has committed to bring clarity on PFAS.

210 https://environment.ec.europa.eu/topics/water/drinking-water_en.

211 https://eur-lex.europa.eu/eli/dir/2024/1785/oj/eng

212 http://data.europa.eu/eli/reg/2024/1849/oj.

The **Sustainable and Smart Mobility Strategy**[213] sets the target of almost all light-duty vehicles (LDV) and new heavy-duty vehicles (HDV) on the road to be zero-emission at tailpipe by 2050. The revision of the CO2 emission performance standards for light-duty vehicles and for heavy-duty vehicles, together with the new Regulation on Alternative Fuels Infrastructure (AFIR) and the revised Eurovignette Directive, which requires Member States to differentiate tolls based on vehicles' CO2 emissions, defining a clear trajectory for the transition to zero-emission vehicles. The new Euro 7 standards set limits to the pollutant emissions of new vehicles (both LDVs and HDVs), including emissions from brakes and tyres that will remain relevant for zero-emission vehicles. The revision of the Combined Transport Directive (CTD)[214] aims to further reduce externalities of transport promoting wider uptake of intermodal transport instead of more polluting road-only transport. The proposal for a regulation on the accounting of greenhouse gas emissions of transport services (CountEmissions EU)[215] aims to provide a harmonised framework to calculate and disclose transport emissions. This aims to provide transparent and comparable data to inform more sustainable transport choices. Overall, the legal framework set through these instruments will significantly reduce air pollution from road transport.

2.1.6. Reducing exposure to hazardous substances and radiation

Reducing exposure to hazardous substances and radiation contributes significantly to cancer prevention. It is particularly important to improve safety of products for consumers and professional users and reduce the exposure to carcinogens in specific settings like the workplace, where 52% of annual occupational deaths in the EU can be attributed to work-related cancers[216]. Therefore, the Commission aims to help reduce exposure to both naturally occurring substances, such as ultraviolet radiation and radon, and substances known to cause cancer in the workplace.

a) Sources of natural radiation

The Commission aims to reduce exposure to ultraviolet radiation. Directive 2014/35/EU (the Low Voltage Directive)[217] covers all safety aspects of electrical equipment, including health-related risks, and thus also covers the risk of cancer. The Commission has not come forward with additional measures due to the current lack of evidence to suggest that further measures would add to the protection of EU citizens from health risks associated with

213 https://transport.ec.europa.eu/transport-themes/mobility-strategy_en.

214 https://www.europarl.europa.eu/legislative-train/spotlight-JD%2023-24/file-second-review-of-the-combined-transport-directive#:~:text=The%20revision%20proposed%20in%20November,same%20starting%20and%20end%20points.

215 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0441.

216 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020PC0571.

217 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0035#:~:text=The%20purpose%20of%20this%20Directive,functioning%20of%20the%20internal%20market.

sunbeds, beyond the protection already provided under the Low Voltage Directive.

Radon is a natural occurring radioactive gas which emanates from the underground and accumulates and concentrates in enclosed spaces like houses. Radon is known to be an important cause of lung cancer in the population after smoking. To ensure a stronger protection of European citizens from ionizing radiation in general and from exposure to radon in particular, the EU has developed a comprehensive set of European radiation protection legislation, with Council Directive 2013/59/Euratom[218] – the Basic Safety Standards (BSS) Directive – being the main piece. The Directive defines for the first time a legally binding framework for radon protection and establishes detailed and concrete requirements for the protection of individuals from exposure to radon, aiming at the prevention of future radon exposures as well as the mitigation and reduction of existing radon exposures. The Directive requires Member States to establish national radon action plans as well as national radon reference levels.

To assess how the requirements on radon have been implemented into practice, the Commission published a **study in 2023 reviewing and evaluating in detail all national radon action plans**[219] established in Member States. The study provided an overview of the development and content of national radon action plans in Europe, evaluated the practical implementation of the actions set out in these action plans, identified challenges related to the practical implementation as well as best practices. In summary, the BSS Directive requirements had a positive effect on the development of radon policies and strategies in Europe, defining one of the highest standards on radon worldwide. All Member States have established National Radon Action Plans which are currently in varying stages of implementation. As part of the national plans, many European countries are currently engaged in indoor radon measurement campaigns. The Commission, through its Joint Research Centre, is collecting this data and preparing an updated European Radon Map[220].

The Commission is committed to further accompany Member States' efforts in implementing national radon policies and strategies with a view to reducing the long-term risks from radon exposures and related lung cancer incidence.

b) Work-related carcinogens

Work-related cancer is one of the biggest occupational health problems in Europe. To address the issue, the provision of current and reliable data on the exposure of workers to risks that can lead to the disease is paramount. EU-OSHA conducted a Workers' Exposure Survey on cancer risk factors in Europe (WES).[221] The survey aims to better identify the

218 https://eur-lex.europa.eu/eli/dir/2013/59/oj/eng.
219 https://op.europa.eu/en/publication-detail/-/publication/d8b69649-aaae-11ee-b164-01aa75ed71a1/language-en.
220 https://remon.jrc.ec.europa.eu/About/Atlas-of-Natural-Radiation/Digital-Atlas/Indoor-radon-AM/Indoor-radon-concentration.
221 https://osha.europa.eu/en/facts-and-figures/workers-exposure-survey-cancer-risk-factors-europe.

cancer risk factors responsible for most of the exposures, providing an accurate and comprehensive overview that can contribute to preventive measures, awareness-raising and policymaking, ultimately helping in the fight against occupational cancer.

Concerning carcinogens at the workplace, the Commission adopted in June 2021 the communication 'EU strategic framework on health and safety at work 2021-2027 – Occupational safety and health in a changing world of work'[222]. The new strategic framework sets out the key actions needed to improve workers' health and safety and describes instruments to address these.

In March 2022, Directive (EU) 2022/43[223] was adopted, amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work. The Directive set new or revised occupational exposure limits for three important substances (acrylonitrile, nickel compounds, and benzene). It also extended the scope of the Carcinogens and Mutagens Directive 2004/37/EC to cover reprotoxic substances, chemicals which may interfere with the human reproductive system or cause developmental toxicity in the offspring, becoming the Carcinogens, Mutagens and Reprotoxic substances Directive 2004/37/EC. As part of preparations of the sixth revision of Directive 2004/37/EC[224], the Commission services are assessing the appropriateness of further improving the protection of workers' health with regard to the following priority substances or groups of substances or process-generated substances: welding fumes, polycyclic aromatic hydrocarbons (PAHs), isoprene, 1,4-dioxane and cobalt and inorganic cobalt compounds.

Directive (EU) 2023/2668 of the European Parliament and of the Council of 22 November 2023[225] amended Directive 2009/148/EC on the protection of workers from the risks related to **exposure to asbestos** at work. The amendment aims to improve workers' protection by significantly lowering the occupational exposure limit (OEL) value for **asbestos**, given the latest scientific knowledge and technological developments. The Asbestos at Work Directive (2009/148/EC)[226] provides a framework of general principles to enable Member States to ensure the consistent application of minimum requirements.

2.1.7. Preventing cancers caused by infections

Targeting **hepatitis B and C**, the project VH-COMSAVAC[227] (Viral Hepatitis - Multi-country Viral Hepatitis COMmunity Screening, Vaccination, and Care), is working on scaling up and adapting community-based HBV and HCV testing and HBV vaccination models of care among marginalised populations (in Spain, Italy and Greece) with

222 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0323.
223 https://eur-lex.europa.eu/eli/dir/2022/431/oj/eng
224 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02004L0037-20240408.
225 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32023L2668.
226 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02009L0148-20231220.
227. https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/vh-comsavac_en.

documented high HBV and HCV incidence and prevalence, using simplified diagnostic tools and patient-centred referral processes to reduce liver cancer-associated mortality.

In the area of H. pylori eradication, as the main risk factor for gastric cancer, the project EUROHELICAN[228] (Accelerating gastric cancer reduction in Europe through Helicobacter pylori eradication), kicked off in November 2022, is testing the feasibility of a H. pylori test-and-treat strategy as a means of gastric cancer prevention, and examining the long-term adverse effects of such a strategy. The findings will be of relevance also for gastric cancer screening efforts, and the project TOGAS (see chapter 3.2).

Horizon Europe also supports **research on prophylactic vaccines** against cancers caused by infections, such as the Vax2Muc project[229] targeting H. pylori.

2.2. Improving early detection of cancer

The 2022 Council Recommendation on cancer screening calls on Member States to seek high levels of participation, based on informed consent, and to ensure equitable access of particular socioeconomic and marginalised groups. The Commission launched the **cancer screening awareness campaign #GetScreenedEU**[230] in May 2023, during European Week Against Cancer. The campaign aims to raise awareness of the need for and benefits of cancer screening and the EU initiatives in this area, particularly among people from a lower socioeconomic background who have been shown to attend screening organized through population-based programmes less often in many countries[231]. It was rolled out initially in five countries (Belgium, Cyprus, Estonia, Malta and Latvia), which had population-based screening programmes in place but participation rates below the EU average. The campaign will be rolled out in a second phase, which will kick off in early 2025.

The EU Cancer Mission is also directly supporting the implementation of the revised Council recommendation on screening through **targeted knowledge generation**. It has committed EUR 60 million (Mission Work Programme 2021[232]) to boost the development of innovative methods and technologies for cancer screening and early detection; six research projects have been funded. In addition, the Cancer Mission Work Programme 2024[233] includes a topic to support the development of tests for early detection of heritable cancers, from which three topics have been funded.

There are also several examples of EU-funded projects **developing technologies and solutions to foster an earlier detection of cancer**. One example is the Innovative Health

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228 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/eurohelican_en.

229 https://www.vax2muc.eu/.

230 https://cancer-screening.campaign.europa.eu/index_en.

231 https://cancer-inequalities.jrc.ec.europa.eu/focus-on-prevention-detection.

232 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-12-missions_horizon-2021-2022_en.pdf.

233 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-12-missions_horizon-2023-2024_en.pdf.

Initiative (IHI)[234] funded project IDERHA[235] that links and analyses, with artificial intelligence and machine learning, human health data to improve early detection of lung cancer and therefore the quality of life for lung cancer patients.

2.3. Ensuring high standards in cancer care

2.3.1. Delivery of high-quality care

Patients, healthcare professionals, researchers and decision makers need reliable and transparent information on cancer centers and networks in the EU. To contribute to this objective, the **EU Cancer Treatment Capacity and Capability Digital Mapping action was launched. Through the Cancer Care Beacon – Reducing Disparities Across the EU (BEACON)**[236] project, running from November 2022 to October 2024, mapped oncological information in the 27 Member States of the EU, and built a website where this information is publicly available (BEACON Wiki)[237]. A decision-making tool to help patients, healthcare professionals, researchers and decision makers access and utilise this information was also built, to facilitate access to high quality cancer care, education and research. The BEACON consortium also developed a sustainability strategy to continue updating this information beyond the lifespan of the project, aiming to set up a foundation to manage the platform.

2.3.2. Personalised cancer prevention and medicine

Preventing and treating cancer as effectively as possible calls for a personalised approach tailored to the characteristics of the patient and the disease. In this respect, the **Cancer Diagnostic and Treatment for All initiative** aims at advancing access to state of the art cancer treatment applying genomics and personalised medicine through the projects PCM4EU[238] (Personalised Cancer Medicine for all EU citizens), CAN.HEAL[239] (Building the EU Cancer and Health Genomics Platform) and CHIP AML 22 (Improved diagnostics and survival for all children with Acute Myeloid Leukemia treated within the NOPHO-DB- SHIP consortium; a cross-European collaboration)[240], expected to be finalised by the end of 2025.

The work started under this initiative builds on and complements ongoing work on cancer genomics and personalised medicine such as **the European 1+Million Genomes Initiative (1+MG)[241].** This aims to enable secure access to genomics and the corresponding

234 https://www.ihi.europa.eu/.
235 https://www.iderha.org/.
236 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/beacon_en.
237 https://wiki.beaconcancer.org/index.php?title=Cancer_Beacon.
238 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/pcm4eu_en.
239 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/canheal_en.
240 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/chip-aml22_en.
241 https://digital-strategy.ec.europa.eu/en/policies/1-million-genomes.

clinical data across Europe, to support research and policy making and incentivise personalised treatment options to improve disease prevention. Since its inception in 2018, the initiative has gained support from 25 Member States and Norway. The 1+MG Roadmap 2023-2027[242] includes cancer among its implementation tracks. Building on the Roadmap, the cornerstone of the initiative is the **Genomic Data Infrastructure (GDI)** project, co-funded under the Digital Europe Programme and including organisations from 24 European countries[243]. The GDI will be a decentralised data infrastructure for genomic and clinical data access across Europe. Cancer is one of GDI's key use cases, both on the prevention (screening) and treatment (precision oncology) side.

In addition, the cancer working group of 1+MG has developed the 1+MG Minimal Dataset for Cancer (1+MG-MDC) that facilitates the construction of databases with high-quality cancer genomic databases with associated clinical information.[244]

A **Roadmap to Personalised Prevention** is currently being developed by EU funded project Prophet. The roadmap will provide a detailed blueprint for implementing tailored preventive strategies for each individual, based on the latest scientific advancements and the specific needs of each context. It is expected to be finalised by the end of 2025. A first draft will be submitted to public consultation in the first half of 2025.

A **Joint Action on personalised cancer medicine** currently under development will build on the aforementioned projects to test and increase the use, knowledge and trust in these new technologies across . Work will commence in conjunction with the new Networks of Expertise and the EU Network of Comprehensive Cancer Centers to support deployment.

Additionally, in its first 2024 Joint Transnational Call, the **European Personalised Medicine Partnership (EPPerMed[245])** funded 14 cancer-related personalised medicine projects through its first Joint Transnational Call in 2024. Research conducted in this call will result in the identification or validation of targets and biomarkers for Personalised Medicine approaches that, amongst other things, will aid better prevention strategies and lead to new evidence regarding clinical impact. These include diagnostic OMICS in glioblastoma (PerCareGlio[246]), genomics- and biomarker-based tools to reduce chemotherapy in paediatric leukaemia (GEPARD-2[247]), OMICs to identify personalised therapeutic targets for fetal-type tumours (ColoStem-applied[248]), or biobanking for personalised drug target validation in melanoma (PerMel-AI[249]). Additionally, the 2021 Horizon Europe call "Data-driven decision-support tools for better health care delivery and policy-making with a focus on cancer" funded three personalised medicine projects on cancer including topics such as data-driven cancer genome interpretation for personalised

242 https://ec.europa.eu/newsroom/dae/redirection/document/99974.
243 https://gdi.onemilliongenomes.eu/.
244 https://doi.org/10.1038/s41588-024-01721-x.
245 https://www.eppermed.eu/.
246 https://www.eppermed.eu/funding-projects/projects-results/project-database/percareglio/.
247 https://gepard-project.eu/.
248 https://www.eppermed.eu/funding-projects/projects-results/project-database/colostem-applied/.
249 https://www.eppermed.eu/funding-projects/projects-results/project-database/permel-ai/.

cancer (CGI-Clinics[250]); individualized lung cancer care (I3LUNG[251]) and patient personalised and preferred treatment and care choices (4D Picture[252]).

2.3.3. Clinical aspects

Clinical trials are necessary to demonstrate the efficacy and safety of medicines. Not all clinical trials are conducted with the objective of submitting a marketing authorisation application. Clinical trials may also be conducted in order to improve treatment and patient care or improve clinical best practices. They allow early access to potential new medicines for subjects enrolled in the trial and ensure robustness of data while safeguarding the ethical rights and dignity of patients.

The **Clinical Trials Regulation (EU) 536/2014 (CTR)**[253] was adopted in 2014 and repealed the Directive 2001/20/EC on 31 January 2022 when the Clinical Trials Information System (CTIS) proved to be functional and when the conditions for Member States and applicants to submit, receive, and process the clinical trial applications were fulfilled. Since 31 January 2023, CTIS is the single-entry point application for initial clinical trial application submission, authorisation and supervision in the EU/EEA countries. Information on the trials is published on the CTIS public portal which has been revamped in 2024 to make it more user-friendly for the general public and will continue to be improved in the future.

The CTR became applicable with a 3-year transitional period (until 30 January 2025). From 31 January 2025 onwards, only the CTR applies. The CTR aims at (i) improving information-sharing between Member States and foster collaboration on safety assessment, (ii) increasing transparency towards the public of information on clinical trials, (iii) reducing administrative burden by establishing a single IT system common across Europe, and (iv) reducing administrative burden for sponsors by establishing one single set of rules directly applicable in all EU/EEA countries for the processing of clinical trial applications.

Besides the regulatory framework, the Commission with the Heads of Medicines Agencies and the European Medicines Agency launched in 2022 the **Accelerating Clinical Trials in the EU (ACT EU) initiative**[254]**.** The scope of the initiative is to foster seamless coordination among stakeholders, regulators and ethics committees to eventually lead to more cross-border collaboration. The common vision is to nurture in Europe better, faster, optimised clinical trials.

The **Regulation on Health Technology Assessment**[255] entered into force in 11 January 2025 and applies from 12 January 2025. Joint clinical assessments (JCA) will start with new cancer medicines and advanced therapy medicinal products. Member States have the

250 https://www.cgiclinics.eu/.
251 https://i3lung.eu/.
252 https://4dpicture.eu/.
253 https://health.ec.europa.eu/medicinal-products/clinical-trials/clinical-trials-regulation-eu-no-5362014_en.
254 https://accelerating-clinical-trials.europa.eu/index_en.
255 https://health.ec.europa.eu/publications/regulation-eu-20212282-health-technology-assessment_en.

obligation to consider the JCA reports in their national health technology assessments. These will help national decision making on pricing and reimbursement and to speed up access for patients to innovative medicines.

2.3.4. Drug development

Repurposing of drugs already on the market or in late clinical stages is an increasingly promising strategy for developing novel therapies, especially cancer treatment. The aim of the ongoing **NEWROAD project**[256] (running until October 2025) is to develop an EU-wide capability for Systematic Drug Repurposing, meaning the ability to identify with a high degree of predictive accuracy novel therapies for any disease of interest and at a future stage any combination of diseases. To achieve this, NEWROAD is developing an open, collaborative in silico platform for the repurposing of drugs in oncology based on Augmented Intelligence architecture layered on top of Artificial Intelligence algorithms, initially targeted at rare and paediatric cancer research.

2.3.5. Healthcare systems and workforce

The provision of high-quality cancer care is contingent upon a high-quality multidisciplinary workforce. Patients are entitled to the highest level of care achievable, and healthcare professionals require support to ensure ongoing training and skill enhancement throughout their professional lives.

The **Marie Skłodowska-Curie Actions**[257] (MSCA) funds initiatives concerning education and training of individuals, research and innovation in the fight against cancer. Under Horizon 2020, the MSCA have funded 533 research projects in the field of cancer, worth EUR 415 million and involving around 2 900 researchers at both PhD and postdoctoral level. MSCA continues to fund these projects under Horizon Europe. So far, 76 projects proposals have been signed that are related to cancer research since 2021. MSCA-funded cancer research is focussed in the areas of prevention, prediction, detection, diagnosis and treatment including clinical expertise. It directly contributes to both the Cancer Mission and the Cancer Plan.

Since 2023, **volunteering activities of the European Solidarity Corps**[258] are receiving financial support from the Horizon Europe Missions, which are implemented by National Agencies. In practical terms, the top-up allows the European Solidarity Corps to offer more volunteering opportunities for young Europeans to address the priorities of the Missions, including cancer. Through the synergies of the European Solidarity Corps with the Horizon Europe Missions more young people are mobilised to give their time to climate and environmental projects as well as health projects. This connection helps to deliver a systemic change as young people across the EU and associated countries support the aims

256 https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/newroad_en?prefLang=nl.
257 https://marie-sklodowska-curie-actions.ec.europa.eu.
258 https://youth.europa.eu/solidarity_en.

of the Missions through their participation in volunteering activities.

A relevant example is the European Solidarity Corps project of the Dutch organisation, Treat it Queer, which is a foundation that promotes adequate medical treatment for queer individuals, including cervical cancer screenings for those not identifying as female. It does so through research and education (trainings) for medical professionals, both nationally and internationally. Volunteers assist primarily in the communications & education department.[259]

The European Institute of Innovation and Technology (EIT) Health[260] further supports health professional training through education, research, and innovation activities. The EIT Health WorkInHealth initiative[261] provides for complementary funding for needs-driven training and education programmes that address talent gaps evidenced through its own Skills Observatory. Over EUR 20 million has been allocated by EIT Health for education and training over the period of 2023-2025 including for the EIT labelled MSc and PhD programmes, summer/winter schools or training modules for professionals as well as for patients and citizens. The EIT Health community brings knowledge of medical professionals, researchers, entrepreneurs, innovators and patients together to address the biggest health challenges facing Europe, including the fight against cancer. It provides continuous learning opportunities to reduce the shortage of entrepreneurial skills and competence in deep-tech fields. In addition, the EIT Health Academy, a digital learning platform, fosters excellence in healthcare innovation education.

The EU funded **Transforming Health and Care Partnership (THCS)**[262] invests in education and training of health and care professionals to support implementation of innovative models and solutions. It aims to help deliver high-quality care by improving the resilience, organisation and coordination of healthcare systems. It promotes the transfer and implementation of good practices, the uptake of digital tools. In its first Joint Transnational call it also funded several projects focusing on cancer.

2.3.6. SAMIRA Action Plan

Nuclear and radiation science and technologies are indispensable in the fight against cancer and contribute significantly to all stages of cancer patients' care, including early detection, diagnosis, treatment and palliative care[263]. These technologies provide approximately 500 million diagnostic tests and 1.5 million cancer treatments to EU citizens each year.

In February 2021, the SAMIRA (Strategic Agenda for Medical Ionising Radiation Applications) Action Plan[264] was adopted as the energy sector's contribution to the Cancer

[259] Project n° 2023-1-NL02- ESC51-VTJ000128009 (01/06/2023-31/05/2025 of EUR 38.598).
[260] https://eit.europa.eu/
[261] https://eithealth.eu/what-we-do/workinhealth-foundation/.
[262] https://www.thcspartnership.eu/.
[263] https://www.who.int/publications/i/item/9789241565462.
[264] https://energy.ec.europa.eu/topics/nuclear-energy/radiological-and-nuclear-technology-health/samira-action-

Plan. It is the EU's first comprehensive plan for action to support safe, high-quality, reliable use of radiological and nuclear technology in healthcare, across three pillars.

a) Security of supply of medical radioisotopes

At the end of 2021, the Commission began engaging stakeholders to identify weaknesses in the supply chain of medical radioisotopes, as part of the preparatory work for the **European Radioisotope Valley Initiative (ERVI**), as foreseen in the SAMIRA Action Plan. A steering group was set up, a consultation was launched in 2022[265][266] and a workshop on the supply of medical radioisotopes was held in April 2023[267]. ERVI aims to strengthen the supply of source materials, optimise industrial-scale production of radioisotopes, and support research into novel nuclear medicine therapies and radioisotopes production technologies. The ultimate goal is to increase the EU's autonomy, maintain global leadership in the nuclear medicine sector and enhance patient's access to cancer treatments. Preliminary results from a feasibility assessment study suggest that the proposal may build on existing EU mechanisms, such as the European Observatory on the Supply of Medical Radioisotopes[268], while other ERVI strands should provide support to new production infrastructures, and to research, development and innovation. A proposal on ERVI design and functioning is anticipated by the end of 2025. The Council of the European Union[269] and the European Economic and Social Committee[270] have shown their support to this initiative.

b) Quality and safety of medical radiation applications

Since 2021, the Commission has launched fourteen projects aiming to improve crucial aspects of quality and safety in medical radiological applications, six of whom under the EU4Health budget. To achieve the necessary coordination and collaboration, the Commission created the Steering Group on Quality and Safety (SGQS)[271] of medical applications of ionising radiation, composed of representatives from both the health and the radiation protection authorities of EU countries.

In April 2024, a **Commission Recommendation on clinical audit**[272] was adopted, containing advice to Member States on establishing a national framework for clinical audits, to enhance patient safety and improve radiological procedures. Implementation of

plan_en#:~:text=Adopted%20in%20February%202021%2C%20the,and%20radiological%20technologies%20and%20applications.

265 https://energy.ec.europa.eu/system/files/2023-01/Consultation%20results%20report%20Rev%20C.pdf.

266 https://energy.ec.europa.eu/document/download/226b8baf-f50e-4342-9287-639e0193233b_en?filename=Consultation%20results%20analysis%20report%20Rev%20D.pdf

267 https://circabc.europa.eu/ui/group/f814179f-dd78-4f86-b5de-8bf6d9723745/library/71c26c0e-a69f-460b-bfed-32ff36647784?p=1&n=10&sort=modified_DESC.

268 https://euratom-supply.ec.europa.eu/activities/supply-medical-radioisotopes_en.

269 https://data.consilium.europa.eu/doc/document/ST-11293-2024-INIT/en/pdf.

270 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202404661.

271 https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupID=3845.

272 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401112.

clinical audits is further supported by two Clinical Audit Campaigns (CLAUD-IT and CAT-ClinART), targeting 11 Member States, supported by EU4Health, and thereby ensuring a continuation from the Euratom-supported QUADRANT study[273,274].

Some of the ongoing SAMIRA projects are dealing with cross-policy issues, such as the **regulation of radiopharmaceuticals[275] and radiation-emitting medical devices[276]**, and will underpin Commission follow-up activities on co-ordinating the implementation of Euratom requirements for radiation protection and EU legislation for clinical trials and medical devices. Furthermore, the EU4Health support for SAMIRA, such as work on quality and safety of radiological imaging of children and young patients, builds upon previous work under the Horizon Europe and Euratom research programmes and helps build synergies between these programmes.

To achieve high quality and safety of medical radiological applications**, availability of highly trained medical professionals** is quintessential. Building on previous collaborative work in this area (publication RP 174[277] and RP175[278]), the EU REST study[279], has investigated staffing levels and current curricula in the EU, and provided recommendations on the EU workforce availability, education and training needs to ensure quality and safety of medical applications involving ionising radiation.

The area of **equal access to modern technology and interventions** benefitted from Euratom research support for developing databases and new IT and AI tools for radiation protection of patients in radiological imaging (e.g. MEDIRAD and SINFONIA projects, PIANOFORTE partnership[280]). Additional support for dissemination of these tools in cancer diagnostics and treatment was ensured through EU4Health (e.g. i-Violin project[281]), as well as through synergies with the European Cancer Imaging Initiative (EUCAIM project[282]).

The output of the SAMIRA studies and projects in the area of quality and safety will be implemented in Member States with further support from the Commission, being prepared under the Joint Action PrISMA[283], ongoing since May 2024.

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273 https://www.eurosafeimaging.org/clinical-audit/quadrant.

274 https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/org-details/985772104/project/101161063/program/43332642/details?isExactMatch=true&type=ORGANISATION&order=DESC&pageNumber=1&pageSize=50&sortBy=lastModified&orgType=participant.

275 https://www.eibir.org/projects/simplerad/.

276 Study on the implementation of EURATOM and Union legislation with respect to medical devices emitting ionising radiation, ongoing.

277 https://op.europa.eu/en/publication-detail/-/publication/b82ed768-4c50-4c9a-a789-98a3b0df5391.

278 https://op.europa.eu/en/publication-detail/-/publication/9020ff7f-e7c6-4c11-a0f5-50449beeba0b.

279 https://op.europa.eu/en/publication-detail/-/publication/dc0dd10d-d879-11ef-be2a-01aa75ed71a1/language-en.

280 https://pianoforte-partnership.eu/.

281 https://www.eibir.org/projects/i-violin/.

282 https://cancerimage.eu/.

283 https://www.rivm.nl/en/international-projects/samira-prisma.

c) Innovation and development

The **SAMIRA actions on research and innovation** aim to support stable and resilient supply of medical radioisotopes, advance quality and safety of applications, and facilitate innovation in medical radiation therapies and imaging. In January 2024, the Commission published a European Research Roadmap[284] for medical applications of nuclear and radiation technology (developed after the Euramed Rocc-n-Roll strategic agenda[285]) which aims to create synergies between European and national programmes in the areas of nuclear, health and digital research.

2.4. Improving the quality of life for cancer patients and survivors

People with a history of cancer who face hurdles in their daily lives may be covered by broader, not necessarily cancer-specific frameworks, such as those protecting people with disabilities. In the context of the **Strategy for the rights of persons with disabilities** (2021-2030)[286], the Commission proposed seven flagship initiatives aimed at improving the lives of persons with disabilities. One of the initiatives, the Disability Employment Package[287], focuses on return to work. Based on the resources of the EU Agency for Health and Safety at Work (EU OSHA), the Commission issued a guidance on effective return to work as well as on retaining of persons with disabilities in employment. Moreover, the Package explains the obligations, roles and responsibilities of the employers to provide so-called reasonable accommodation in employment for persons with disabilities set out under the Employment Equality Directive.

Cancer does not only concern patients, but also their families, friends and caregivers. **Informal care** throughout the EU is done predominantly by women, perpetuating gender inequalities. The **Work-Life Balance Directive** 2019/1158 for parents and carers[288], which the Member States had to transpose into national law by August 2022, introduced a right to 10 days paid paternity leave, 5 days of carer's leave, a non-transferable right to 2 months of paid parental leave, and a right to request flexible working arrangements. The aim is to better support work-life balance of working parents and carers and encourage a more equal sharing of caring responsibilities between men and women. The Directive also provides that carers who exercise their right under the Directive must not be discriminated against in the workplace.

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284 https://op.europa.eu/en/publication-detail/-/publication/dc4597d8-ea77-11ee-bf53-01aa75ed71a1/language-en.

285 https://roccnroll.euramed.eu/.

286 https://employment-social-affairs.ec.europa.eu/policies-and-activities/social-protection-social-inclusion/persons-disabilities/union-equality-strategy-rights-persons-disabilities-2021-2030_en#:~:text=Monitoring%20framework-,The%20Strategy%20for%20the%20Rights%20of%20Persons%20with%20Disabilities%202021,an%20equal%20basis%20with%20others.&text=to%2Dread%20version)-,In%20March%202021%2C%20the%20European%20Commission%20adopted%20the%20Strategy%20for,persons%20with%20disabilities%202021%2D2030.

287 https://ec.europa.eu/social/main.jsp?catId=1597&langId=en.

288 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019L1158.

Under the Directive, carers' leave means leave from work for workers in order to provide personal care or support to a relative, or to a person who lives in the same household as the worker, and who is in need of significant care or support for a serious medical reason. The Commission assessed the completeness of national measures with the Directive and is currently assessing compliance. Some Member States had not yet completed their transposition of the Directive and the Commission, in November 2023, decided to refer them to the Court of Justice. A report on the transposition of the Directive in the Member States has been prepared, based on replies from national experts and was updated in 2023.[289]

Palliative care is another crucial area for those patients being in a life-threatening stage of the disease, intending to prevent and relieve suffering through the early identification, assessment and treatment of pain and other problems, whether physical, psychosocial, or spiritual.[290] Palliative care will be covered in the European quality assurance schemes for breast, colorectal and cervical cancer, and prospectively in those for lung, prostate and gastric cancer (see under chapter 3.2). One of the Networks of Expertise to be established under the Joint Action JANE-2 will focus specifically on palliative care (see under chapter 3.3.1).

Under the EU Cancer Mission, a conference on innovative **palliative care** for people with cancer was organised on 8 October 2024 with the intention to discuss with stakeholders the challenges, barriers and recommendations in order to improve the lives of patients and their families to live longer and better. A Policy Brief document with six recommendations was discussed and endorsed at this conference.[291]

2.5. Reducing cancer inequalities across the EU

The COVID-19 pandemic disproportionately affected vulnerable populations, including cancer patients, due to measures such as isolation and lockdowns which disrupted follow-up care and quality of life. In response, the Commission launched the Joint Action **Strengthening eHealth including telemedicine and remote monitoring for health care systems for CANcer prevention and care (eCAN)**[292] in September 2022 and spanning two years, with EUR 4 million from the EU4Health Programme, to integrate telemedicine and remote monitoring into healthcare systems.

Especially in crisis times, as the COVID-19 pandemic has shown, telemedicine has proven crucial in ensuring continuity of healthcare services through online consultations and real-time clinical data exchange. Yet, despite the promising outlook, the path to widespread telemedicine adoption in the EU health systems has encountered challenges, including regulatory frameworks at the country and EU levels, sustainable financing of digital health

[289] https://www.equalitylaw.eu/downloads/6048-the-transposition-of-the-work-life-balance-directive-in-eu-member-states-ii-considerable-work-still-to-be-done.
[290] https://www.who.int/europe/health-topics/palliative-care#tab=tab_1.
[291] https://op.europa.eu/en/publication-detail/-/publication/71d0f6f3-95a4-11ef-a130-01aa75ed71a1/language-en.
[292] https://health.ec.europa.eu/non-communicable-diseases/cancer/europes-beating-cancer-plan-eu4health-financed-projects/projects/ecan_en.

services, and infrastructural requirements. The goal of eCAN is to extend the benefits of eHealth to all cancer patients, particularly those in remote and rural areas, by improving cancer care and reducing inequalities across the EU. The objectives of eCAN are: firstly, to expand access to care and protect patients from exposure to infectious diseases like COVID-19; and secondly, to address the heightened risk faced by cancer patients when visiting healthcare facilities during the pandemic, by promoting virtual contact models. This was demonstrated through three pilot programs across ten European countries, involving 260 patients who received remote rehabilitation and psychological support through teleconsultation and telemonitoring. A follow up Joint Action, eCAN-2 will build on the valuable experiences and lessons learned from its predecessor. Under the 2024 EU4Health Work Programme, an invitation to Member States authorities to submit a proposal was launched in June 2024, and the Joint Action will be supported by EUR 20 million of EU funding.

There are 4 ERNs addressing rare cancers with an incidence of fewer than six per 100,000 per year which already benefit from The **Clinical Patient Management System** CPMS: ERN EURACAN on adult cancers (solid tumours), EuroBloodNet ERN on Haematological diseases, ERN GENTURIS on genetic tumour risk syndromes and ERN PaedCan on paediatric cancers. The Clinical Patient Management System (CPMS)[293] was created by the Commission as an IT platform to enable virtual discussions in a secure environment where patients' data can be safely uploaded and discussed. This platform has been adopted by the 24 European Reference Networks for Rare Diseases and can be considered as an example of a successful adoption of a digital tool by a community of healthcare professionals which enables provision of better, specialized care based on consultations of several experts. The platform has been upgraded to CPMS 2.0 and currently the ERNs are migrating to the new platform. The new platform incorporates feedback from clinicians on which features should be improved to make their discussions easier and more effective.

Improving the resilience of health systems can further safeguard the provision of cancer care during health crises. The EU4Health Programme financed an action which was carried out jointly by the OECD and the European Observatory on Health Systems and Policies, to develop a methodology for resilience testing of health systems. The aim was to provide health authorities with an assessment framework to detect critical health system weaknesses against specific shocks, as well as long-term structural challenges, and to help authorities consider options for remedial action. The methodology was tested in pilots simulating shock scenarios from a globally spreading infectious disease, a sudden shortage of health workers and a prolonged heat wave. A handbook with the methodology is published and available to health authorities.[294]

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293 https://cpms.ern-net.eu/login/?next=/insight/.

294 https://eurohealthobservatory.who.int/publications/i/strengthening-health-systems-a-practical-handbook-for-resilience-testing, and https://www.oecd.org/en/publications/strengthening-health-systems_3a39921e-en.html.

Across all 27 national **Recovery and Resilience Plans**[295], a total of around EUR 42 billion are earmarked for reforms and investments to strengthen health systems in the aftermath of the COVID-19 pandemic and to foster better healthcare. This includes specific investments and reforms to improve cancer prevention, diagnosis, treatment and care. Up until now, several Member States have reported results regarding the implementation of reforms and investments relating to cancer, for example:

- **Bulgaria** adopted a National Plan for Combating Cancer 2021-2027. The plan outlines measures to enhance early detection of cancer through screening activities, availability and accuracy of cancer diagnostics, access to and effectiveness of treatments, and the well-being of cancer patients and cancer survivors.
- **Croatia** has installed a range of new equipment at the Clinical Hospital Centre (KBC) Merkur to improve, among others, breast cancer screening and diagnosis. Croatia expects that the new equipment will increase the availability of health services and the number of patients accessing the services, and will also enhance the quality of healthcare for all categories of patients.
- **Czechia** has carried out a feasibility study for establishing the Czech Oncological Institute. This Institute will provide cancer prevention, diagnosis and treatment in one single location. It will be built as part of the Motol University Hospital in Prague, which is the largest hospital complex in Czech Republic and the second largest in Europe. An overall investment of around EUR 222 million under the Recovery and Resilience Facility (RRF) is foreseen for the Czech Oncological Institute. Czechia has also developed and approved the National Oncological Programme for 2022-2030.
- An RRF investment of EUR 9.4 million has enabled **Malta** to install cutting-edge equipment at the Sir Anthony Mamo Oncology Center, to improve radiotherapy. This facility is now using a modern Magnetic Resonance Linear Accelerator, which provides superior imaging quality combined with improved therapy delivery.
- **Poland** has adopted several legal acts regarding cancer care. The Act on the National Oncological Network and other relevant acts aim at: creating a new organisational structure and new model of cancer care management, including the monitoring centres; criteria to assign hospitals to different categories/levels of the National Oncological Network; improving the organisation of the oncological care across the areas of primary care, specialised outpatient healthcare, hospital treatment and rehabilitation; and improving the quality of life of patients during and after oncological treatment.
- In **Spain**, public health campaigns have been carried out in various topics including cancer prevention and dissemination of the European Code Against Cancer. Furthermore, Spain has implemented training activities for health professionals targeting, among other topics, early detection of cancer, and has also been renewing hospital equipment to improve, among others, cancer diagnosis.

[295] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages_en.

Cohesion Policy Funds, particularly the European Regional Development Fund (ERDF), further contribute to combatting inequalities in cancer care between Member States. Some examples of cancer-related infrastructure and investments include[296]:

- The Breast Unit of the Lower Silesian Oncology Centre in Wrocław, Poland as the first highly specialised unit in the region in which breast cancer patients receive comprehensive health care. Serving around 40,000 patients annually and treating 1,000 breast cancer patients, the new facility has cut treatment wait times from three months to an average of 8 days[297] (EU contribution of EUR 7.3 million).
- Portable Device for Early Contactless Diagnosis of Skin Cancer, Latvia, aims at creating a portable diagnostic device and cloud-based service for early detection of melanoma and other skin cancers, post-operative scar monitoring, and early tumor recurrence detection. The development of such device will significantly improve the availability of early diagnosis and post-operative monitoring of skin cancer, increasing the life expectancy and quality of human life[298] (EU contribution of EUR 548 649).
- Acquisition of a linear accelerator and technological upgrade of the radiation oncology service, Portugal – Norte. The Hospital Centre of Trás-os-Montes and Alto Douro received EU funding to remodel and enhance its radiation oncology service through the acquisition of a new linear accelerator and upgrades to existing technology. The project ensures essential access to radiotherapy for cancer patients in urgent need, improving treatment efficiency in the region.[299]

2.6. Putting childhood cancer under the spotlight

The Commission is investing in training and continuous education, particularly through the inter-specialty cancer training programme developed through INTERACT-EUROPE (see chapter 3.3.5). The curriculum is being expanded to cover paediatric cancer. This will complement the work of the **European Reference Network for Paediatric Oncology** (ERN PaedCAN), which aims to improve access to high-quality healthcare for children and adolescents with cancer, whose conditions require specialist expertise and tools not widely available due to low case volumes and lack of resources. The Network aims to increase childhood cancer survival and quality of life by fostering cooperation, research, and training. This has the goal of reducing current inequalities in childhood cancer survival and healthcare capabilities in Member States.

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296 Please consult the Kohesio database (https://kohesio.ec.europa.eu/en) for further projects related to cancer: Cancer EU projects ERDF - European Regional Development Fund

297 https://ec.europa.eu/regional_policy/en/projects/Poland/breast-unit-in-wroclaw-poland-provides-full-range-of-cancer-prevention-and-treatment-services:

298 https://www.asi.lu.lv/en/programmes-and-projects/european-structural-funds/izpilditi-eraf/portable-device-for-early-contactless-diagnosis-of-skin-cancer/ and more info on the project: https://www.esfondi.lv/istenotie-projekti/1-1-1-1-16-a-197.

299 https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/44416173/101115081/I3?isExactMatch=true&frameworkProgramme=44416173&order=DESC&pageNumber=1&pageSize=50&sortBy=title.

The Cancer Plan puts emphasis on quality of life and ensures that young patients not only survive their illness, but they can also live long, fulfilling lives. The EU's comprehensive approach to mental health[300] adopted in June 2023 supports adults and children affected by cancer and their families, including the development of a platform to boost the mental health of young cancer survivors[301].

In 2023, an expert workshop organised by the Commission[302], on the Environmental Determinants of Childhood and Adolescent Cancer found a current lack of robust evidence linking several environmental risk factors to paediatric cancer, highlighting knowledge gaps that require further research funding.

The European Joint Programme co-fund on Rare Diseases (EJP RD)[303] also supported training activities from the European Reference Networks (ERNs) on rare diseases, for example ERN GENTURIS, EURACAN and Endo-ERN, for workshops on Hereditary breast and ovarian cancer (HBOC) research in Latvia or on "Comprehensive gene profiling, molecular tumor board and artificial intelligence in the diagnosis and treatment of patients with rare adult cancers" or rare endocrine cancers of adults and children.

2.7. A modern approach to cancer: new technologies, research and innovation at the service of patient-centred cancer prevention and care

The Innovative Health Initiative (IHI) recently funded R&I projects which are developing new technologies to optimise cancer care. Among them is IMAGIO[304] advancing interventional oncology, a technique in which miniaturised instruments are inserted into a cancer patient's body and guided to the tumour with the help of imaging technologies. Once at the tumour, they can apply the cancer treatment (such as chemotherapy or radiotherapy) directly and precisely, limiting damage to healthy cells and tissues. GUIDE.MRD[305] is exploring how blood tests could be used to detect minute traces of cancer in the blood following surgery to remove a tumour. This would help clinicians to identify which cancer patients would benefit from further treatment such as chemotherapy or radiotherapy. ILLUMINATE[306] focuses on Lutetium-177-PSMA, used to treat prostate cancer that has spread to other organs and become resistant to treatments such as hormone therapy. This project aims to facilitate the identification of patients who are most likely to benefit from Lu-177-PSMA, a radioligand-based therapy for prostate cancer, and deliver improved manufacture methods to minimise the risk of shortages.

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300 https://health.ec.europa.eu/publications/comprehensive-approach-mental-health_en.

301 Three ongoing EU4Healthprojects link mental health and cancer, particularly among young cancer patients: MELODIC, ALTHEA, and DESIPOC.AC (https://www.europeancancer.org/eu-projects/impact/mental-health.html).

302 https://op.europa.eu/en/publication-detail/-/publication/7c98ec90-b83c-11ef-91ed-01aa75ed71a1/language-en.

303 https://cordis.europa.eu/project/id/825575.

304 https://health.ec.europa.eu/publications/comprehensive-approach-mental-health_en.

305 https://www.ihi.europa.eu/projects-results/project-factsheets/guidemrd; https://www.guidemrd-horizon.eu/.

306 https://www.ihi.europa.eu/projects-results/project-factsheets/illuminate; https://www.ihi-illuminate.org/.

The **Accelerate.EU**[307] **project** focusses on innovative theranostics, such as solutions based on therapeutic and diagnostic pairs for hard-to-treat cancers. Accelerate.EU develops innovative targeted alpha-therapies to address unmet clinical needs in pancreatic, breast, and brain cancers. The consortium combines diagnostics with potent cytotoxic effects of alpha-particles to enable precise tumour radiation while minimising side effects. Thera4Care[308]'s core goal is to investigate, validate and translate into clinical practice new theranostic solutions for the benefit of patients with solid cancers, including sarcoma, ovarian and pancreatic cancers. Thera4Care aims to establish a European network of radiotheranostics centres that can rapidly develop and implement radiotheranostics tools and solutions.

In the context of advancing personalised and precision medicine in cancer, the **European Virtual Human Twins (VHT) Initiative**[309] is an EU framework for supporting the emergence and adoption of the next generation of virtual human twins solutions in health and care. The initiative was launched in December 2023 and entails several actions across research and deployment. It is supported by the Virtual Human Twins Manifesto"[310], signed by over 75 stakeholders across industry, academia and research, showing their intention to further the development of VHT technologies and its ecosystem in Europe. The cornerstone of the initiative will be a EUR 24 **million state-of-the-art digital platform for advanced VHT models integration and validation**[311] funded under the Digital Europe programme, for which the procurement procedure is ongoing. The Initiative is also supported by Horizon-Europe-funded research and innovation actions. This includes the CERTAINTY[312] project which focuses on creating a virtual human twin for personalised cancer treatment, in particular for improving the effectiveness of cellular immunotherapies. The European VHT Initiative also builds on results and outcomes of previous research actions funded under Horizon2020, including PRIMAGE[313] (PRedictive In-silico Multiscale Analytics to support cancer personalized diaGnosis and prognosis, Empowered by imaging biomarkers of EUR 10.311.920), iPC[314] (individualizedPaediatricCure: Cloud-based virtual-patient models for precision paediatric oncology of EUR 14.748.400), and BD2Decide[315] (Big Data and models for personalised Head and Neck Cancer Decision support of EUR 4.845.000).

The **European Health Data Space** Regulation[316] covers three areas in healthcare and digital health: primary use of health data, secondary reuse of health data and the

[307] https://www.ihi.europa.eu/projects-results/project-factsheets/acceleratеeu; https://ihi-accelerate.eu/.
[308] https://www.ihi.europa.eu/projects-results/project-factsheets/thera4care.
[309] https://www.virtualhumantwins.eu.
[310] https://digital-strategy.ec.europa.eu/en/library/virtual-human-twins-manifesto#:~:text=The%20Manifesto%20aims%20at%20promoting%20collaboration%20in%20the,while%20also%20facilitating%20the%20context%20for%20further%20collaboration.
[311] https://digital-strategy.ec.europa.eu/en/funding/platform-advanced-virtual-human-twin-vht-models.
[312] https://www.certainty-virtualtwin.eu/.
[313] https://www.primageproject.eu.
[314] https://ipc-project.eu/about/.
[315] https://bd2decide.eu/.
[316] https://health.ec.europa.eu/ehealth-digital-health-and-care/european-health-data-space_en.

harmonisation of electronic health record (EHR) systems. The provisions for the primary use of health data aim at empowering citizens with access and control of their health data wherever they are in Europe. It also ensures continuity of care across Europe thanks to the cross-border MyHealth@EU infrastructure. Therefore, cancer patients will also be able to access and control their health data and who has access to their data. Moreover, they will be able to visit for example healthcare providers across Europe and be able to share their electronic patient summary, laboratory results and medical images with them translated in the language of the healthcare provider.

The **reuse of secondary use of health data** aims to facilitate findability and accessibility of health-related data for research, policy making and innovation. This would result in better diagnostic tools and treatment in the longer term and better evidence-based policy making. The secondary use of health data will be supported by the HealthData@EU infrastructure. This is not a centralised repository of health data, but rather data stays with the data holder and the access to it is facilitated through national Health Data Access Bodies that connect to an EU central platform. Cancer researchers will be able to visit the EHDS common EU metadata catalogue and find the description (metadata records) of available datasets they would be interested to use in their research. Then they will fill in a single common data access application form to request a permit to access these data. Data will be accessed and analysed in a secure processing environment. Finally, fully anonymised aggregated results will be extracted from the secure processing environment.

As regards **Artificial Intelligence**, Horizon Europe supports the development of standard operating procedures for the integration of AI in cancer care. Since 2022, a number of collaborative projects are tackling clinical decision-making, including adverse side effects of a specific personalised treatment. Examples are the CLASSICA project[317], validating AI in classifying cancer in real-time surgery, or PRE-ACT[318], predicting radiotherapy side effects using explainable AI.

Cohesion policy also supports innovation related to cancer, based on national or regional innovation strategies, in EU's Member States and Regions. For example[319]:

- Czechia – Center of Cancer Ecology – Research of cancer microenvironment in organ propoting cancer growth and proliferation (EU contribution: EUR 8 319 408)
- Croatia – Radiochirurgia – The air of Hope (EU contribution: EUR 3 922 821)
- Poland - Preclinical and clinical development of recombinant fusion protein in targeted anticancer therapy (EU contribution: EUR 4 040 9677,76)
- Romania – Determination of the molecular profile of myeloproliferative neoplasms and acute myeloid leukaemia for the design of precoce, prognosis and treatment strategies (EU contribution: EUR 1 723 500)

317 https://cordis.europa.eu/project/id/101057321.
318 https://preact-horizoneurope.eu/prediction-of-radiotherapy-side-effects-using-explainable-ai.
319 Please consult the Kohesio database for further projects related to cancer: Cancer EU projects ERDF - European Regional Development Fund.

- Portugal – PCCC Porto's Comprehensive Cancer Centre (EU contribution: EUR 17 636,53)

Furthermore, the Interregional Innovation Investments (I3) instrument, part of the Cohesion policy funding, in particular the European Regional Development Fund, supports interregional innovation projects in their commercialization and scale-up phases[320]. Health-related I3 projects have a prominent role, fostering strong partnerships and networks. For example, the DigiONE I3 project[321] unites 26 partners from 9 Member States to create a digital research network linking clinical and molecular data from 15 cancer centres.

Cancer is a global challenge. **International cooperation** in cancer research will particularly benefit all involved actors. Among the EU's partners in the world, most notably, an **EU – US Health Task Force** has been launched in May 2023[322], cancer being one out of three strands the cooperation focusses on (the other two being global health threats and strengthening the global health architecture). The cooperation in cancer builds on and seeks synergies between the US Cancer Moonshot Initiative, and the EU Cancer Plan and the Cancer Mission. Two technical working groups have been established, one focusing on **paediatric cancer** and the other on **lung cancer screening**, bringing together experts in the respective fields from the EU and US side. The technical working groups have been working on defining two demonstration projects, aiming at enhancing the EU-US cooperation in paediatric and lung cancer domains respectively, which would be of particular benefit to citizens across both sides of the Atlantic.

In childhood cancer, a joint demonstration project (an observational study with the potential to be expanded to an interventional format in the future) focusing on very rare tumours has been proposed. The technical working group aims to agree on a common definition of "rare tumors", to align common data elements and conduct parallel studies, and share aggregated data on one or two rare paediatric cancers. In lung cancer, the technical working group will be conducting a modelling study on the effectiveness of lung cancer screening combined with smoking cessation support leveraging data on prevalence of tobacco use, lung cancer incidence and mortality from both the US and the EU.

320 https://eismea.ec.europa.eu/programmes/interregional-innovation-investments-i3-instrument_en.
321 https://digicore-cancer.eu/projects/7.
322 https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2771.

ANNEX 3: GLOSSARY

Term or acronym	*Meaning or definition*
ACCELERATE.EU	Elevating the Future of Cancer Care with Alpha Theranostics
ACT EU	Accelerating Clinical Trials in the European Union initiative
AFIR	Alternative Fuels Infrastructure
AI	Artificial intelligence
AVMSD	Audiovisual Media Services Directive
AYA	Adolescent and Young Adult
BD2Decide	Big Data and Models for Personalised Head and Neck Cancer Decision support
BEACON	Cancer Care BEACON Project - Reducing disparities across the European Union
BECA	European Parliament Beating Cancer Committee
Best-ReMaP	Joint Action on Implementation of Validated Best Practices in Nutrition
BeWell	Blueprint Alliance for a Future Health Workforce Strategy on Digital and Green Skills
BSS	Basic Safety Standards
CAD	Chemical Agents Directive
Cancer Plan	Europe's Beating Cancer Plan
CAN.HEAL	Building the European Cancer and Health Genomics Platform
CanScreen-ECIS	Strengthening Cancer Screening Data Collection to Update the European Cancer Information System and Improve Quality and Coverage of Cancer Screening Programmes in Europe
canSERV	Providing Cutting Edge Cancer Research Services across Europe

CCC	Comprehensive Cancer Centre
CERTAINTY	Cellular Immunotherapy Virtual Twin for Personalised Cancer Treatment
CHIP AML 22	Improved Diagnostics and Survival for all Children with Acute Myeloid Leukemia treated within the NOPHO-DB- SHIP Consortium, a Cross-European Collaboration
CLASSICA	Validating Artificial Intelligence in Classifying Cancer in Real-Time Surgery
CMRD	Carcinogens, Mutagens or Reprotoxic Substances Directive
Commission	European Commission
COPD	Chronic Obstructive Pulmonary Disease
COP10	Tenth Session of the Conference of the Parties
Count Emissions EU	Measuring Emissions from Transport Services
CPMS	Clinical Patient Management System
CraNE	Network of Comprehensive Cancer Centres
CTIS	Clinical Trials Information System
CTR	Clinical Trials Regulation
DALYs	Disability-Adjusted Life Years
DIGITAL	Digital Europe Programme
ECAC	European Code Against Cancer
eCan	Strengthening eHealth including Telemedicine and Remote Monitoring for Health Care Systems for Cancer Prevention and Care
ECDC	European Centre for Disease Prevention and Control
ECHA	European Chemicals Agency
ECIS	European Cancer Information System
ECIR	European Cancer Inequalities Registry
ECL	Association of European Cancer Leagues

ECPDC	European Cancer Patient Digital Centre
EDIC	European Digital Infrastructure Consortium
EDITH	Ecosystem Digital Twins in Health
EEA	European Economic Area
EESC	European Economic and Social Committee
EFTA	European Free Trade Association
EHDS	European Health Data Space
EHR	Electronic Health Record
EIT	European Institute of Innovation and Technology
EMA	European Medicines Agency
EOSC4Cancer	European Open Science Cloud for Cancer
EPPerMed	European Partnership on Personalised Medicine
ERDF	European Regional Development Fund
ERN	European Reference Network
ERVI	European Radioisotope Valley Initiative
ESF+	European Social Fund Plus
EU	European Union
EUCAIM	European Federation for Cancer Images
EUCanScreen	Joint Action on the implementation of cancer screening programmes
EU-CAYAS-NET	European Network of Youth Cancer Survivors
EUnetCCC	European Network of Comprehensive Cancer Centres
EU-OSHA	European Agency for Safety and Health at Work
EURACAN	European Reference Network for Rare Adult Solid Cancers
EURAMED	European Medical Application and Radiation Protection Concept

EU RD Platform	European Platform on Rare Disease Registration
EU-REST	European Union Radiation, Education, Staffing and Training
EuroBloodNet	European Reference Network on Rare Hematological Diseases
EUROHELICAN	Accelerating Gastric Cancer Reduction in Europe through Helicobacter Pylori Eradication
Eurostat	European Statistics: Statistical Office of the European Union
EVID-ACTION	Evidence into Action Alcohol Project
FBDG	Food Based Dietary Guidelines
FCTC	Framework Convention on Tobacco Control
FOPNL	Front-of-pack Nutrition Labelling
4P-CAN	Personalized Cancer Primary Prevention research through Citizen Participation and Digitally Enabled Social Innovation
GENIAL	Understanding Gene Environment Interaction in Alcohol-related Hepatocellular Carcinoma
GENTURIS	European Reference Network on Genetic Tumour Risk Syndromes
GUIDE.MRD	Guiding Multi-Modal Therapies against Minimal Residual Disease by Liquid Biopsies
HaDEA	Health and Digital Executive Agency
HBC	Hepatitis B Virus
HCV	Hepatitis C Virus
HDV	Heavy-Duty Vehicles
HEROES	Joint Action on Health Workforce to meet Health challenges
HPV	Human Papillomavirus
H. Pylori	Helicobacter Pylori

IDERHA	Integration of Heterogeneous Data and Evidence towards Regulatory and Health Technology Assessment Acceptance
IHI	Innovative Health Initiative
ILLUMINATE	Increasing lutetium production, while leveraging metabolic imaging to enhance theranostics effectiveness
IMAGIO	Imaging and Advanced Guidance for Workflow Optimization in Interventional Oncology
iPC	Individualized Paediatric Cure, Cloud-Based Virtual-Patient Models for Precision Paediatric Oncology
IT	Information Technology
i-Violin	Implementing Verifiable Oncological Imaging by Quality Assurance and Optimisation
JA	Joint Action
JANE-1	Joint Action on Networks of Expertise 1
JANE-2	Joint Action on Networks of Expertise 2
JARDIN	Joint Action on the Integration of European Reference Networks into National Healthcare Systems
JCA	Joint Clinical Assessments
JRC	Joint Research Centre
KBC	Clinical Hospital Centre
KCC	Knowledge Centre on Cancer
LDV	Light-Duty Vehicles
LVD	Low Voltage Directive
Mapping Study	Study on Mapping and Evaluating the Implementation of Europe's Beating Cancer Plan
MEDIRAD	Implications of Medical Low Dose Radiation Exposure
MDS	Minimal Dataset for Cancer
MFF	Multiannual Financial Framework

MSc	Master of Science
MSCA	Marie Skłodowska-Curie Actions
NCD	Non-Communicable Disease
NEWROAD	Open Platform for European Networking and Repurposing of Oncological Assets and Drugs
NGO	Non-Governmental Organisation
OACCUs	Outdoor Against Cancer Connects Us
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
1+MG	European 1+Million Genomes Initiative
OriON	Joint Action on Contribution to the Cancer Inequalities Registry to Monitor National Cancer Control Policies
PaedCan	European Reference Network on Paediatric Cancer
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PCM4EU	Personalised Cancer Medicine for all European Citizens
PERCH	Joint Action on Partnership to Contrast Human Papillomavirus
PFAS	Per- and Polyfluoroalkyl Substances
PIANOFORTE	European Partnership for Radiation Protection Research
PRAISE-U	Prostate Cancer Awareness and Initiative for Screening in the European Union
PRE-ACT	Predicting Radiotherapy Side Effects using Explainable Artificial Intelligence
PreventNCD	Joint Action to Prevent Non-Communicable Diseases and Cancer
PRIMAGE	Predictive In-silico Multiscale Analytics to Support Cancer Personalized Diagnosis and Prognosis, Empowered by Imaging Biomarkers

PROPHET	Personalised Prevention Roadmap for the Future Healthcare in Europe
PROTECT Europe	Vaccinating Europe to Protect against the Cancers caused by HPV
PRISMA	Reflecting the Positive Diversities of European Priorities for Research and Measurement in End-of-Life Care
QA	Quality Assurance
QuADRANT	European study on Clinical Audit of Medical Radiological Procedures
ReThink HPVaccination	Rethink and Reduce inequalities in HPV vaccination through personalized communication & training, based on social innovation and behavioural determinants of health
RRF	Recovery and Resilience Facility
SAMIRA	Strategic Agenda for Medical Ionising Radiation Applications
SGQS	Steering Group on Quality and Safety
SINFONIA	Radiation risk appraisal for detrimental effects from medical exposure during management of patients with lymphoma or brain tumour
SmartCARE	Smart Card Application Improving Cancer Survivors Quality of Life
SME	Small and Medium-sized Enterprise
SOLACE	Strengthening the Screening of Lung Cancer in Europe
THCS	Transforming Health and Care Partnership
Thera4Care	Theranostics Ecosystem for Personalised Care
TOGAS	Towards Gastric Cancer Screening Implementation in the European Union
TSI	Technical Support Instrument
UNCAN.eu	European Initiative to Understand Cancer
US	United States

UV	Ultraviolet
Vax2muc	Next Generation Vaccines Against Gastrointestinal Mucosal Pathogens, using Helicobacter Pylori as Model Pathogen
VH-COMSAVAC	Viral Hepatitis - Multi-Country Viral Hepatitis Community Screening, Vaccination, and Care
VHT	European Virtual Human Twins
WES	Workers' Exposure Survey on cancer risk factors in Europe
WHO	World Health Organization