



European
Commission



Europe's Beating Cancer Plan

Communication from the
commission to the European
Parliament and the Council

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1. A CANCER PLAN FOR EUROPE: INTRODUCTION

Cancer concerns us all in one way or another. In 2020, 2.7 million people in the European Union were diagnosed with the disease, and another 1.3 million people lost their lives to it¹. Cancer is an individual diagnosis that has important impacts on patients, but it also severely affects the lives of their families and friends.

Today, Europe accounts for a tenth of the world's population, but a quarter of the world's cancer cases. Unless we take decisive action, lives lost to cancer in the EU are set to increase by more than 24% by 2035², making it the leading cause of death in the EU. The overall economic impact of cancer in Europe is estimated to exceed €100 billion annually. Moreover, the COVID-19 pandemic has severely impacted cancer care, disrupting prevention and treatment, delaying diagnosis and vaccination, and affecting access to medicines. Since the pandemic began, the number of cancer diagnoses has decreased, foreshadowing a future increase in cases.

The EU has been working to tackle cancer for decades and its actions, for example **on tobacco control** and **protection from hazardous substances**, have saved and prolonged lives. However, the last European action plan against cancer was developed in the early 1990s and the world has seen major progress in cancer treatment in the years since. Personalised medicine – tailored to individual situations and needs – has radically changed patients' prognoses. Meanwhile, research and innovation, such as mRNA³ technologies, alongside digital technologies, have dramatically advanced our understanding of cancer initiation and progression, prevention and diagnosis.

Europe urgently needs a renewed commitment to cancer prevention, treatment and care that recognises the growing challenges, and opportunities to overcome them, including the developments in cancer care. We need a whole-of-government approach that focuses on the patient and maximises the potential of new technologies and insights; strengthens cooperation and opportunities for EU

added value; eradicates inequalities in access to cancer knowledge, prevention, diagnosis and care; and delivers improved health outcomes to patients.

Europe's Beating Cancer Plan is the EU's response to these needs. It reflects a **political commitment to leave no stone unturned to take action against cancer**. Mobilising the collective power of the EU to drive change to the benefit of our citizens, the Cancer Plan contains concrete, ambitious actions that will support, coordinate and complement Member States' efforts to reduce the suffering caused by cancer. It marks the beginning of a new era in cancer prevention and care, where patients have access to high-quality screening, treatments and the latest state of the art technologies, with support at EU level that allows scale and specialisation, while fully respecting Member States' responsibilities in health policy⁴. In doing so, it delivers on the political guidelines of Commission President von der Leyen. It is also a direct response to the strong and clear calls from the European Parliament for action in this area.

The aim of Europe's Beating Cancer Plan is to tackle the entire disease pathway. It is structured around four key action areas where the EU can add the most value: (1) prevention; (2) early detection; (3) diagnosis and treatment; and (4) quality of life of cancer patients and survivors. Over the coming years, it will focus on research and innovation, tap into the potential that digitalisation and new technologies offer, and mobilise financial instruments to support Member States.

With its policy objectives, supported by **ten flagship initiatives** and **multiple supporting actions**, the Cancer Plan will help Member States turn the tide against cancer. It will enable expertise and resources to be shared across the EU – supporting countries, regions and cities with less knowledge and capacity. It will help researchers to exchange findings between small and large Member States and to have access to crucial health data on the potential causes of cancer and promising treatments for it. Medical staff

1 Most recent estimates from the European Cancer Information System (ECIS) for the EU-27 countries. New diagnoses cover all types of cancer, apart from non-melanoma skin cancer.

2 <https://gco.iarc.fr/tomorrow/en/>.

3 mRNA (messenger Ribonucleic acid) is the molecule that direct cells in the body to make proteins. It can be used to make vaccines to prevent or treat specific diseases, such as certain types of cancer or viruses like COVID-19.

4 See Article 168 of the Treaty on the Functioning of the European Union.



and hospitals will be able to tap into a wealth of shared information. Ultimately it will ensure that patients across the EU can benefit from better care and treatment.

Europe's Beating Cancer Plan is a key pillar of a **stronger European Health** Union and a more secure, better-prepared and more resilient EU. It outlines substantive actions to mitigate the impact of the COVID-19 pandemic on cancer care and support structural improvements for a more sustainable cancer pathway. In addition, the new, ambitious **EU4Health programme** and other EU instruments will provide substantial financial support with **€4 billion** to Member States in their efforts to make their health systems more robust and more able to address cancer.

The COVID-19 pandemic and the experience with vaccine development have clearly shown us that when we come together, when we pool our efforts and resources, it is possible to make unprecedented progress. It requires the unique convening power of the EU, fixing goals, setting clear deadlines, committing the necessary funding and connecting the main actors through effective partnerships. Applying this approach to cancer can deliver effective results. By working as a team and combining efforts at national and EU level, we can overcome individual weaknesses, reduce fragmentation, and deliver a more effective and more equal response to

cancer. The strength and success must also build on engaging and communicating with the wider public to support our joint efforts. Recognising the value of partnerships, the Cancer Plan is based on a **'Health in All Policies'** multi-stakeholder approach and is the result of an extensive consultation process. It reflects the views of stakeholder groups and patients, the European Parliament and Member States.

A broad array of EU policies will support the Cancer Plan with digitalisation, research and innovation as the starting point for a new approach to cancer care in the EU. Actions will span across policy areas, from employment, education, social policy and equality, through marketing, agriculture, energy, the environment and climate, to transport, cohesion policy, and taxation. This will enable the Cancer Plan to tackle cancer drivers in our schools and in the workplaces, in research labs, in our towns and cities, and in our rural communities; and to do so using innovation, healthy choices and improvements to our environment. Cooperation will also be pursued internationally within the established cooperation framework with the World Health Organisation (WHO) and the long-standing collaboration with its International Agency for Research on Cancer.

Most importantly of all, **Europe's Beating Cancer Plan** places the interests and well-being of patients, their families and the wider population at its heart, every step of the way.

2. A MODERN APPROACH TO CANCER: NEW TECHNOLOGIES, RESEARCH AND INNOVATION AT THE SERVICE OF PATIENT-CENTRED CANCER PREVENTION AND CARE

The more we understand of the biological processes, risk factors and health determinants driving cancer, the more effectively we can prevent, detect, diagnose and treat it. Cancer research, innovation and new technologies can save lives; but to save as many lives as possible, new knowledge must be shared as widely as possible, so that health authorities and other stakeholders can translate them into concrete actions. The last 20 years have seen us make tremendous scientific progress. Our understanding of the role of genetics and genomics and gender differences in cancer has increased enormously, as has digitalisation and the growing power of computer-based analytical tools.

The smart combination of health data and new technologies caters for the exponential development of personalised medicine, which becomes a powerful tool to address cancer through tailor-made

prevention and treatment strategies so patients receive the therapies that work best for them, and no money is wasted on trial and error treatments.

Building on what the EU, Member States, healthcare professionals, industry and patient organisations have already achieved, Europe's Beating Cancer Plan will use the remarkable potential of new technologies and scientific progress, including insights from comorbidities, social and behavioural sciences, to better address cancer across the entire disease pathway through its flagships and actions. The EU is in a unique position to maximise this potential by pooling scientific expertise, knowledge, data and computing power to develop innovative and personalised solutions that will benefit cancer patients.

2.1. Driving change through knowledge and research

Stepping up our research and innovation efforts will enable us to better understand cancer risk factors, as well as improving diagnoses, therapies, treatments and prevention policies. Several key EU-wide initiatives will contribute to this goal.

The **Mission on Cancer**⁵, foreseen under Horizon Europe, will be a major component of the EU's **investment in cancer research and innovation**. It will deepen our understanding of the complexity of cancer. Drawing on research and innovation, public health and policy development, it will inform many of the Cancer Plan's key actions and deliver solutions for patients, including those with comorbidities.

In addition, Horizon Europe will **fund research infrastructures, cloud computing** and European Innovation Council actions⁶. This includes

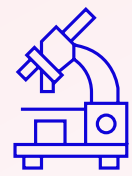
offering researchers access to relevant enabling infrastructures and tools. Furthermore, the European Institute of Innovation and Technology⁷ will use its partnerships for innovation, known as Knowledge and Innovation Communities, to deliver transformative, people-centred solutions against cancer. The Marie Skłodowska-Curie Actions will continue developing researchers' skills in cancer prevention, prediction, detection, diagnosis and treatment⁸. For the 2021-2025 period, the Research and Training Programme of the European Atomic Energy Community (EURATOM) will support research on the protection of patients benefiting from diagnostic and cancer therapies involving radiation sources.

5 The Cancer Mission Board, an independent expert group of the Commission, has prepared an outline with 13 recommendations for consideration which will serve as basis for the implementation of the Cancer Mission, https://ec.europa.eu/info/publications/conquering-cancer-mission-possible_en

6 <https://ec.europa.eu/research/eic/index.cfm>

7 <https://eit.europa.eu>

8 The Marie Skłodowska-Curie Actions (MSCA) are the EU flagship programme for researchers' mobility and training through the development of excellent doctoral programmes, collaborative research and fellowship schemes, and contribute to excellent research, https://ec.europa.eu/research/mariecurieactions/node_en



Two new partnerships, foreseen under Horizon Europe, will fully capitalise on investments in research and deliver tangible benefits for patients. The proposed **Innovative Health Initiative** will help create an EU-wide research and innovation ecosystem. It will promote cooperation between the health industry, academia and other stakeholders to translate scientific knowledge into innovations that address prevention, diagnosis, treatment and management of diseases, including cancer. The proposed **Partnership on Transforming Health and Care Systems**, bringing together health and care authorities, regions, patients and healthcare professionals, will provide insights into how to better take up research and innovation opportunities.

Flagship 1: A new **Knowledge Centre on Cancer** will be launched in 2021 within the Joint Research Centre to help coordinate scientific and technical cancer-related initiatives at EU level. It will act as a knowledge broker, diffusing best practice implementation and issuing guidelines to feed the design and roll-out of new actions under the Cancer Plan. It will, for example, contribute to the European Cancer Imaging Initiative, the European Health Data Space and research carried out under the Cancer Mission.

2.2. Making the most of data and digitalisation in cancer prevention and care

The digital transformation can bring significant benefits for the health sector. As much as 30% of the world's stored data are currently produced by health systems. But the health sector lags behind in exploiting this potential. It is a sector which is 'data-rich but information poor'⁹.

Cancer care is one of the major disease areas that will benefit from the European Digital Strategy¹⁰, thanks to better exploitation of real-world data¹¹ using powerful tools such as Artificial Intelligence (AI) and High-Performance Computing¹². Despite this, barriers persist around interoperability¹³, legal and ethical standards, governance, cybersecurity, technical requirements¹⁴, and compliance with personal data protection rules¹⁵.

Electronic health records are set to become crucial tools in cancer prevention and care¹⁶. They will ensure that clinical information is shared efficiently between oncologists, radiologists and surgeons, enhancing

the patients' treatment and survival chances. Health records can also better capture the experiences and outcomes of oncology patients, painting a clearer picture than the 5% that participate in clinical trials. Combining health records, always in compliance with EU data protection rules, with other data sets, such as genomics, can provide even better insights into the efficacy of treatments and their optimisation¹⁷.

Europe's Beating Cancer Plan seeks to make the most of the potential of data and digitalisation. The **European Health Data Space (EHDS)**, which will be proposed in 2021, will **enable cancer patients to securely access and share their health data in an integrated format in the electronic health records** between healthcare providers and across borders in the EU. The EHDS should give general practitioners and specialists access to patients' clinical data, ensuring that health and care delivery happens along the entire patient pathway, and will connect with the Knowledge Centre on Cancer to ensure that

9 OECD (2019), Health in the 21st Century: Putting Data to Work for Stronger Health Systems, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/e3b23f8e-en>.

10 <https://ec.europa.eu/digital-single-market/en/content/european-digital-strategy>.

11 Real-world data is health-related data derived from a diverse human population in real-life settings. Such data can include medical health records, registries, biobanks, administrative data, health surveys, observational studies, health insurance data, data generated from mobile applications etc.

12 Also known as supercomputing, this refers to computing systems with extremely high computational power that are able to solve hugely complex and demanding problems. <https://ec.europa.eu/digital-single-market/en/policies/high-performance-computing>

13 In this respect the European Interoperability Framework will underpin these efforts, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:52017DC0134>.

14 Couespel, N., et al., Strengthening Europe in the fight against cancer, study for the Committee on Environment, Public Health and Food Safety, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2020.

15 <https://eur-lex.europa.eu/eli/reg/2016/679/oj>.

16 An electronic health record is a collection of longitudinal medical records or similar documentation of an individual, in digital form (Commission Recommendation (EU) 2019/243 of 6 February 2019 on a European Electronic Health Record exchange format).

17 Agarwala, V. et al. (2018), Real-World Evidence In Support Of Precision Medicine: Clinico-Genomic Cancer Data As A Case Study, Health Affairs, Vol. 37/5, pp. 765-772.

learnings are shared efficiently. In this context, the Commission will pursue work with Member States on a common exchange format for electronic health records and to tackle data security, privacy and interoperability.

Besides digitalisation of health data, the combined use of new technologies such as AI and High-Performance Computing can help rapidly process large amounts of health data and support the development of better targeted screening mechanisms. It can also lead to quicker, better diagnoses by automating and standardising tasks, while avoiding potential gender and racial or ethnic origin bias. In addition, High-Performance Computing can help us perform complex simulations of molecular and cellular interactions, such as virtually testing the effectiveness of new medicines or repurposed drugs.

Flagship 2: The European Cancer Imaging Initiative will be set up in 2022 to develop an **EU 'atlas' of cancer-related images**, making anonymised images accessible to a wide range of stakeholders across the ecosystem of hospitals, researchers and innovators. It will follow on the proposal to establish the European Health Data Space, and will involve the planned new **Testing and Experimentation Facilities** to link the data to tools such as High-Performance Computing and AI, including also benchmarks for cancer screening algorithms. Supported by Digital Innovation Hubs the initiative will further improve personalised medicine and support innovative solutions, thanks to greater accuracy and reliability in minimally-invasive diagnostics and follow-up of treatments.

Furthermore, the **European Cancer Information System**¹⁸, which monitors the burden of cancer in Europe, **will be expanded** as of 2021. It will include new indicators detailed also by cancer staging¹⁹, and a new section on childhood cancers. New features will also include more detailed data at sub-national

level, thus facilitating linkages with environmental²⁰ and socio-economic data. It will help monitor progress and future needs in addressing cancer at EU and national level. This information is crucial to understanding and tackling cancer.

Flagship initiatives on research, innovation and digitalisation

- ▶ Create a Knowledge Centre on Cancer to facilitate the coordination of scientific and technical cancer-related initiatives at EU level – 2021.
- ▶ Launch a European Cancer Imaging Initiative to support the development of new computer-aided tools to improve personalised medicine and innovative solutions – 2022.

Other actions

- ▶ Enable cancer patients to securely access and share electronic health records for prevention and treatment across borders through the European Health Data Space – 2021-2025.
- ▶ Expand the European Cancer Information System – 2021-2022.
- ▶ Launch Horizon Europe Partnerships to translate scientific knowledge into innovations – 2021.

18 The European Cancer Information System (ECIS) will become a part of the Knowledge Centre on Cancer, <https://ecis.jrc.ec.europa.eu/>.

19 Cancer staging describes the extension of a tumour, and takes into account its size, the invasion of adjacent organs, and the presence in other more distant organs (metastatic cancer).

20 For example with data from the Human Biomonitoring for EU programme (<https://www.hbm4eu.eu/>) or environmental data available via the Information Platform for Chemical Monitoring (<https://ipchem.jrc.ec.europa.eu/>).



3. SAVING LIVES THROUGH SUSTAINABLE CANCER PREVENTION

Prevention is more effective than any cure. About 40% of cancer cases in the EU are preventable. Prevention is also the most cost-efficient long-term cancer control strategy. Benefitting from of a whole-of-government approach, the Cancer Plan aims to raise awareness of and **address key risk factors**, such as cancers caused by smoking, harmful alcohol consumption, obesity and lack of physical activity, exposure to pollution, carcinogenic substances and radiation, as well as cancers triggered by infectious agents. The Cancer Plan also takes into account **health determinants**, including education, socio-economic status, gender, age, and employment. In

addition, attention should be paid to inequalities in access to prevention and cancer care, affecting for example elderly people, people with disabilities, or minorities.

Support for Member States' actions will be complemented by EU initiatives focusing on cancer genomics, with research to identify the genetic predisposition of individuals to develop cancers, opening up new prospects for **personalised risk-assessment and targeted cancer prevention** (see chapter 5.4).

3.1. Improving health literacy on cancer risks and determinants

Improving access to and understanding of risk factors and health determinants is vital to improve health outcomes, especially for complex diseases like cancer. Europe's Beating Cancer Plan will launch actions to give people the information and tools they need to make healthier choices. Promoting cooperation between health and social services and the community is an important part of the Cancer Plan. It will involve social workers, teachers and nurses – they will educate the public on healthy behaviour and patients on how to live well after cancer treatment.

The **European Code against Cancer will be updated** to take into account the latest scientific developments and will add new evidence-based recommendations to improve health literacy. The Cancer Plan will aim

to make at least 80% of the population aware of the Code by 2025. An '**EU Mobile App for Cancer Prevention**', to be funded under the EU4Health programme, will offer individuals information on how to reduce their cancer risks. In doing so, it will extend the Code's coverage and – with information on how to benefit from new developments in personalised cancer risk-assessment – will empower people to manage their own health. A new project on '**Health Literacy for Cancer Prevention and Care**' will also be launched to develop and share best practice to strengthen health literacy in cancer prevention and care programmes, with a focus on disadvantaged groups. These measures will be implemented in the period 2021- 2025.

3.2. Achieving a tobacco-free Europe

Tobacco consumption continues to be the **leading cause of preventable cancer**, with 27% of all cancers attributed to tobacco use²¹. By eliminating tobacco use, nine out every ten cases of lung cancer could be avoided.

Through rigorous enforcement of the EU tobacco control framework and its adaptation to new developments and market trends, including stricter rules on novel products²², Europe's Beating Cancer Plan will put forward actions from 2021 to help create

21 World Health Organization, Regional Office for Europe, 18.02.2020 at <https://www.euro.who.int/en/health-topics/disease-prevention/tobacco/news/news/2020/2/tobacco-use-causes-almost-one-third-of-cancer-deaths-in-the-who-european-region>.

22 For instance: novel tobacco products, e-cigarettes, herbal products for smoking.

a ‘**Tobacco-Free Generation**’ where less than 5% of the population uses tobacco by 2040, compared to around 25% today. The interim goal is to reach the WHO target of a 30% relative reduction in tobacco use by 2025 as compared to 2010, corresponding to a smoking prevalence of around 20% in the EU. The

Commission will continue to prioritise protecting young people from the harmful effects of tobacco and related products.²³

EU-level regulatory instruments will be strengthened to achieve these objectives. Tobacco taxation is one of the most effective instruments to fight tobacco consumption, particularly in deterring young people from taking up smoking. Decisive action will be taken by reviewing the **Tobacco Products Directive**, the **Tobacco Taxation Directive**²⁴ and the **legal framework on cross-border purchases of tobacco by private individuals**²⁵. This includes working in full transparency towards plain packaging and a full ban on flavours, using existing EU agencies to

improve the assessment of ingredients, extending taxation to novel tobacco products, and tackling tobacco advertising, promotion and sponsorship on the internet and social media.

By 2023, the Commission will propose to **update the Council Recommendation on Smoke-Free Environments** both extending its coverage to emerging products, such as e-cigarettes and heated tobacco products, and expanding smoke-free environments, including outdoor spaces. The Cancer Plan will create momentum to better enforce legislation in Member States’ national tobacco control strategies, especially as regards sales to minors and campaigns on giving up smoking. This will make for better implementation of the **WHO Framework Convention on Tobacco Control**, including the obligations on transparency²⁶ and taking fully into account the principles of the Transparency register²⁷. In addition, the EU track and trace system will be extended to all tobacco products by 2024.

3.3. Reducing harmful alcohol consumption

Alcohol-related harm is a major public health concern in the EU. In 2016, cancer was the leading cause of alcohol-attributable deaths with a share of 29%, followed by liver cirrhosis (20%), cardiovascular diseases (19%) and injuries (18%)²⁸. The Commission will increase support for Member States and stakeholders to implement **best practices** and **capacity-building** activities to reduce harmful alcohol consumption in line with the targets of the UN Sustainable Development Goals. This includes a target to achieve a relative reduction of at least 10% in the harmful use of alcohol by 2025²⁹. In addition, the Commission will **review EU legislation on the taxation of alcohol** and on cross-border purchases of alcohol by private individuals³⁰, ensuring that it remains fit for purpose to balance the objectives of public revenue and health protection.

To reduce the exposure of young people to alcohol

marketing, the Commission will closely monitor the implementation of the Audiovisual Media Service Directive provisions on commercial communications for alcoholic beverages, including on online video-sharing platforms. This will involve work with Member States and the European Regulators Group for Audiovisual Media Services (ERGA) and stakeholders to encourage self and co-regulatory initiatives. Furthermore, the Commission will review its promotion policy on alcoholic beverages and in addition propose a **mandatory indication** of the list of ingredients and the nutrition declaration on alcoholic beverage labels before the end of 2022 and of **health warnings on labels** before the end 2023. Support will also be provided to Member States to implement evidence-based brief interventions³¹ on alcohol in primary healthcare, the workplace and social services.

23 According to Eurobarometer data, the trend has reversed for youth smoking rates (age 15-24) which went down to 20% in 2020, from 25% in 2014, following a peak of 29% in 2017.

24 Council Directive 2011/64/EU.

25 Article 32 of Directive 2008/118/EC.

26 WHO Framework Convention on Tobacco Control, Article 5(3), https://www.who.int/fctc/text_download/en/.

27 <https://ec.europa.eu/transparencyregister/public/homePage.do>.

28 For the EU Member States, UK, Norway, and Switzerland: https://www.euro.who.int/_data/assets/pdf_file/0009/386577/fs-alcohol-eng.pdf

29 Between 2010 and 2016 in the European Union only a 1.5% reduction in total consumption has been reached: WHO fact sheet on the SDGs: Alcohol consumption and sustainable development (2020).

30 https://ec.europa.eu/taxation_customs/sites/taxation/files/study_assessing_articles_32_and_36_of_council_directive_2008118ec_concerning_the_general_arrangements_for_excise_duty.pdf.

31 Brief interventions (BI) for alcohol have been shown to be effective in the management of alcohol consumption for harmful alcohol drinkers, who are not seeking treatment. BI is a discussion aimed at raising an individual's awareness of their risky behaviour as a way of motivating them to change it.



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

Cancer risk is heightened by the joint effects of unhealthy diets and physical inactivity³². On nutrition, the Commission will further **reduce the presence of carcinogenic contaminants** in food. It will set maximum levels for more of these contaminants, based on the latest available scientific evidence. The Cancer Plan will then focus on measures to make healthy foods more available. At the same time it will explore with Member States tax incentives to increase their consumption, along with measures to improve consumer information and health literacy and address the marketing and advertising of products linked to cancer risks.

Addressing obesity and diabetes starts in childhood. The Commission will **evaluate the 2014- 2020 EU Action Plan on Childhood Obesity** and propose a follow-up. As announced in the **Farm to Fork Strategy**³³, the Commission will also propose a revision of the **EU school fruit, vegetables and milk scheme in 2023** to make healthy products more available to children and improve their understanding of the benefits of healthy food, supported by the 'EU Mobile App for Cancer Prevention'. It will also propose harmonised, **mandatory front-of-pack** nutrition labelling to empower consumers to make informed, healthy, and sustainable food choices.

Marketing and advertising is designed to influence the choices consumers make. The Commission is planning to prepare an implementation report in 2022 on **the Audiovisual Media Service Directive**, including those on commercial communications on unhealthy food and drinks. The Commission also supports Member States and stakeholders in their effort on reformulation of and on implementation of effective policies to reduce marketing of unhealthy food products, including through a Joint Action on Implementation of Validated Best Practices in Nutrition. The Commission is undertaking a review³⁴ of the promotion policy for agricultural products, with a view to enhancing its contribution to sustainable production and consumption, and in line with the shift to a more plant-based diet, with less red and

processed meat and other foods linked to cancer risks³⁵ and more fruit and vegetables.

Taxation measures can also help with health promotion. The Commission's proposal on VAT rates allows Member States to make more targeted use of rates, for instance to support the availability and affordability of healthy and nutritious food. In addition, in 2022, the Commission will publish a **study mapping fiscal measures and pricing policies** on sugars, soft drinks and alcoholic beverages. Following this, the Commission will look into the feasibility of proposing new tax measures on sugars and soft drinks.

The **'HealthyLifestyle4All'** campaign to be launched in 2021 involving among other key sectors promoting sport, physical activity and healthy diets will contribute to the goals of the Cancer Plan. Member States, regional and local governments and civil society representatives will be invited to help promote healthy choices become easy and affordable choices. To reduce inequalities, HealthyLifestyle4All will focus on involving people with low socioeconomic status and disadvantaged groups, such as people with disabilities or people with a minority racial or ethnic background, and ensuring gender-balanced participation. The Commission will promote investment in active mobility infrastructures, healthy canteens and develop outreach measures. These efforts will be channelled through major EU initiatives such as the European Week of Sport, the EU School Scheme, the Erasmus programme and the European Mobility Week, along with the EU promotion policy for agri-food products.

Other EU actions and initiatives will include the Sustainable Urban Mobility Planning Guide on linking transport and health³⁶. In addition, the Commission will revise the 2013 Urban Mobility Package in 2021 to support sustainable and healthy transport and mobility.

32 Wild CP, Weiderpass E, Stewart BW, editors (2020). World Cancer Report: Cancer Research for Cancer Prevention, Lyon, France: International Agency for Research on Cancer. <http://publications.iarc.fr/586>.

33 https://ec.europa.eu/food/farm2fork_en

34 Commission initiative to review promotion policy for EU agricultural food products, Regulation (EU) 1144/2014 <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12782-Information-and-promotion-measures-for-agricultural-and-food-products-in-the-internal-market-and-in-non-EU-countries>.

35 <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono114.pdf>

36 https://www.eltis.org/sites/default/files/linking_transport_and_health_in_sumps.pdf

3.5. Reducing environmental pollution

Europeans rightly expect to live in healthy, sustainable environments. Yet, despite extensive legislation on environmental pollution, environmental causes are thought to be behind over a quarter of a million cancer deaths in Europe every year³⁷. Environmental pollution has a particularly harmful effect on young children.

Air pollution³⁸ is a main driver of mortality, with pollutants from a wide range of sources, including energy, transport, agriculture and industry - contributing to 400 000 premature deaths per year, including from lung cancer, heart disease and strokes³⁹. Contaminants also remain a significant risk. For instance, chemicals with hazardous properties can be harmful to the environment and human health, causing cancers, and affecting the immune, respiratory, endocrine, reproductive and cardiovascular systems. Weakening of the human immune system increases vulnerability to diseases⁴⁰, including cancer, and reduces the body's capacity to respond to vaccines⁴¹.

Europe's Beating Cancer Plan will interact closely with the Green Deal and its Zero Pollution Action Plan to step up actions on contaminants in surface, ground and drinking water, soil and air. Drawing on

the evaluation of the current air quality legislation⁴², the **EU's air quality standards** will be revised by 2022 to align them more closely with the WHO recommendations⁴³. Improved monitoring, modelling and air quality plans will help local authorities to achieve **cleaner air**. The revision of the Industrial Emissions Directive planned towards the end of 2021 is expected to further reduce the entry of contaminants into water, air and soil. In parallel, the Commission has recently adopted its **Sustainable and Smart Mobility Strategy**, which outlines a series of measures aimed at supporting the shift to zero-emission mobility and reducing environmental pollution from transport.

With the entry into force of the revised Drinking Water Directive, a stronger risk-based approach will be taken to keeping contaminants out of drinking water. Under the Water Framework Directive, the Commission will propose to introduce or tighten limits on the concentrations of certain pollutants in surface or ground waters that could contribute to cancer incidence, including through the consumption of fish and shellfish.

3.6. Reducing exposure to hazardous substances and radiation

Reducing exposure to hazardous substances and radiation will contribute 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.

The Carcinogens and Mutagens Directive protects workers from risks arising from exposure at work. As part of Europe's Beating Cancer Plan, the Commission has proposed to update the Directive,

setting new or revised occupational exposure limits for three important substances: acrylonitrile, nickel compounds, and benzene⁴⁴. Subject to the outcome of the ongoing consultation with the social partners, the Commission plans to present a legislative proposal in 2022 to further reduce worker's exposure to asbestos to protect them from cancer risks. The new **Occupational Safety and Health Strategic Framework 2021-2027** will set strong commitments to reduce occupational exposure to chemicals. EU-OSHA will also further develop the workers' exposure survey on cancer risk factors in Europe⁴⁵ to help reduce work-related cancer.

37 Mortality data for the year 2012 and the WHO European Region high income group of countries; see <https://www.eea.europa.eu/publications/healthy-environment-healthy-lives>

38 <https://www.eea.europa.eu/publications/healthy-environment-healthy-lives>

39 At least one in eight European deaths is caused by environmental pollution and in particular poor air quality, EEA Report No 21/2019.

40 Erickson, BE: Linking pollution and infectious disease (2019), c&en – Chemical & Engineering News, Volume 97, Issue 11.

41 Substances such as perfluorooctane sulfonate and perfluorooctanoic acid are associated with reduced antibody response to vaccination; EFSA, Scientific opinion on PFAS.

42 Fitness check of the Ambient Air Quality Directives SWD(2019) 427.

43 [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)

44 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0571>

45 <https://osha.europa.eu/en/facts-and-figures/workers-exposure-survey-cancer-risk-factors-europe>



The Commission will also explore measures on exposure to ultraviolet radiation, including from sunbeds, which increases the risk of melanoma, the most serious form of skin cancer. The Commission will support Member States in implementing the requirements on protection from ionising radiation, particularly radon⁴⁶, which causes a substantial number of lung cancers. EURATOM's Research and Training Programme will improve knowledge on exposure to radon, and countermeasures to reduce its accumulation in dwellings. Results are expected in 2025.

Finally, implementing the actions under the Commission's **Chemicals Strategy for**

Sustainability⁴⁷ will make it possible to deal with hazardous chemicals more rapidly, and effectively reduce the exposure of consumers and professionals to carcinogenic substances, or to other hazardous chemicals that interfere with the endocrine and immune systems. It will also support a research and innovation agenda for chemicals for the development of safe and sustainable alternatives. Lastly, the EU's capacities for chemical risk assessment should be strengthened through the launch of the Horizon Europe **Partnership on Assessment of Risks from Chemicals**.

3.7. Preventing cancers caused by infections

Many cancers can be prevented and lives saved by vaccination.

Flagship 3: With dedicated funds under the EU4Health programme and other funding instruments, Europe's Beating Cancer Plan will support Member States' efforts to extend routine vaccination against human papillomaviruses of girls and boys – in order to **eliminate cervical cancer and other cancers caused by human papillomaviruses**. The objective is to vaccinate at least 90% of the EU target population of girls and to significantly increase the vaccination of boys by 2030⁴⁸. Member States will play a critical role in meeting this target

Furthermore, the Commission will help ensure access to vaccination against Hepatitis B and to treatments to prevent liver and gastric cancers associated with the Hepatitis C virus and Helicobacter pylori infections. It will also propose a **Council Recommendation on vaccine-preventable cancers** to help address cancer risks associated with Hepatitis B and Human papilloma virus infections. In parallel, as announced by the EU **Pharmaceutical Strategy**, the Commission will examine the system of incentives and obligations to boost innovation and ensure better access to first-line medicines and vaccines.

Flagship initiatives on prevention

- ▶ Eliminate cancers caused by human papillomaviruses through EU support for Member States on vaccination with the aim to vaccinate at least 90% of the EU target population of girls and to significantly increase the vaccination of boys by 2030 – 2021-2030

Other actions

- ▶ Improve health literacy on cancer risk by updating the European Code against Cancer – 2021-2025.
- ▶ Create a 'Tobacco-Free Generation', including reviewing the Tobacco Products and the Tobacco Taxation Directives and the legal framework on cross-border purchases of tobacco; update the Council Recommendation on Smoke-Free Environments, and support implementing the Framework Convention on Tobacco Control – 2021-2025.
- ▶ Review EU legislation on alcohol taxation and cross-border purchases of alcohol products, and propose mandatory labelling of ingredients and nutrient content, along with health warnings on alcoholic beverages – 2021-2023.

46 Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation.

47 COM(2020) 667 final. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a "Chemicals Strategy for Sustainability Towards a Toxic-Free Environment".

48 Based on the three key pillars of the global strategy, the WHO recommends a set of targets or milestones that each country should meet by 2030 to get on the path to eliminating cervical cancer within the century:

- 90% of girls fully vaccinated with the HPV vaccine by the age of 15;
- 70% of women screened using a high-performance test by the age of 35, and again by the age of 45;
- 90% of women identified with cervical disease to receive treatment (90% of women with pre-cancer treated and 90% of women with invasive cancer managed).

<https://www.who.int/news/item/19-08-2020-world-health-assembly-adopts-global-strategy-to-accelerate-cervical-cancer-elimination>

- ▶ Reduce harmful alcohol consumption through support to capacity-building and best practice; reduce young people's exposure to online marketing and advertising of alcohol products; implement evidence-based brief interventions – 2021-2025.
- ▶ Address unhealthy diets, obesity and physical inactivity by reducing carcinogenic contaminants in food; addressing childhood obesity and reviewing the EU school fruit, vegetables and milk scheme; supporting Member States and stakeholders on reformulation of and on effective policies to reduce marketing of unhealthy food products; propose harmonised, mandatory front-of-pack nutrition labelling; launch the 'HealthyLifestyle4All' political commitment – 2021-2024.
- ▶ Align the EU's air quality standards more closely with the WHO guidelines and promote sustainable and smart mobility – 2022-2023.
- ▶ Reduce exposure to carcinogenic substances through the amendment to the Carcinogens and Mutagens Directive – 2021-2025.
- ▶ Adopt a new Occupational Safety and Health Strategic Framework to further reduce workers' exposure to chemicals – 2021-2027.
- ▶ Launch of the Horizon Europe Partnership on Assessment of Risks from Chemicals – 2021.

4. IMPROVING EARLY DETECTION OF CANCER

Early detection through screening offers the best chance of beating cancer and saving lives. As of 2020, 25 EU Member States had introduced in their National Cancer Control Plans population-based screening programmes for breast cancer, 22 for cervical cancer and 20 for colorectal cancer. However, many programmes have not been fully implemented, and unacceptable inequalities persist within and between Member States. For example, coverage of the target population ranges from 6% to 90% for breast cancer screening, and from about 25% to 80% for cervical cancer screening⁴⁹.

To guide further EU action on cancer screening with the most recent evidence, the Commission will launch work in 2021 to prepare a **3rd report on the implementation of the Council recommendation on cancer screening**⁵⁰. Alongside this, in the medium term, the upgraded European Cancer Information System will start to routinely collect indicators to monitor and assess cancer screening programmes.

Flagship 4: Europe's Beating Cancer Plan will put forward a **new EU-supported Cancer Screening Scheme** to help Member States ensure that 90% of the EU population who qualify for breast, cervical and colorectal⁵¹ cancer screenings are offered screening by 2025. The scheme will be supported by EU funding and focus on making improvements in three key areas: access, quality and diagnostics.

On access, the Commission will make a proposal by 2022 to update the **Council Recommendation on cancer screening** to ensure it reflects the latest available scientific evidence. Extending targeted cancer screening beyond breast, colorectal and cervical cancer to include additional cancers, such as prostate, lung and gastric cancer, will be considered. This work will be informed by advice from the European Commission's Group of Chief Scientific Advisors⁵², prepared by early 2022 at the latest. It will consider the latest developments in cancer screening technologies, and assess advances in personalised medicine, AI, big data and other technologies, as well as operational quality assurance.

This evidence will also feed into the work of the Knowledge Centre on Cancer, which will provide new **guidelines and quality assurance schemes** on cancer screening, diagnosis, treatment rehabilitation, follow-up and palliative care for colorectal and cervical cancer, in addition to the ongoing Commission Initiative on Breast Cancer. These will include voluntary accreditation and certification programmes for Cancer Centres and screening programmes, while continuously updating the existing guidelines on breast cancer.

To enhance diagnostics, the Cancer Screening Scheme will feed the new European Cancer Imaging

49 https://ec.europa.eu/health/sites/health/files/state/docs/2018_healthatglance_rep_en.pdf

50 <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32003H0878>

51 The three types of cancer addressed by the Council Recommendation on cancer screening which, in 2003, were the only ones to have the prerequisite to be addressed by population based screening.

52 https://ec.europa.eu/info/research-and-innovation/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors_en



Initiative, by boosting the availability of screening data and promoting new methods to improve the quality and speed of screening programmes using AI.

To bolster the new EU Cancer Screening Scheme, the foreseen Mission on Cancer will generate evidence on optimising existing population-based cancer screening programmes, develop novel approaches for screening and early detection, and provide options to extend screening to new cancers. The new scheme will be rolled out in Member States with funding from the EU4Health programme, support from the Technical Support Instrument, and loans from the European Investment Bank. The European Regional Development Fund can also support investments in early detection. The survival rate for cervical, breast and colorectal cancer is a key indicator of how effective healthcare systems are in cancer care, reflecting both efficiency in early detection and the effectiveness of treatment⁵³.

Flagship initiatives on early detection

- ▶ Develop a new EU Cancer Screening Scheme to ensure that by 2025, 90% of the target population is offered breast, cervical and colorectal cancer screening – 2021-2025.

Other actions

- ▶ Update and explore expansion of the Council Recommendation on cancer screening – 2022.
- ▶ Develop new guidelines and quality assurance schemes for screening, diagnosis, treatment, rehabilitation, follow-up and palliative care for colorectal and cervical cancer, including accreditation and certification programmes, while continuously updating the existing guidelines on breast cancer – 2021-2025.
- ▶ Update the European Cancer Information System to monitor and assess cancer screening programmes – 2021-2022.

5. ENSURING HIGH STANDARDS IN CANCER CARE

Europe's Beating Cancer Plan will seek to ensure that people in the EU have the right to access affordable, preventive and curative healthcare of good quality, as called for under the European Pillar of Social Rights⁵⁴. High-quality cancer care depends on a

number of factors such as a high-quality workforce working in multidisciplinary teams, on timely access to specialised cancer services providing optimal and quality assured treatment, as well as the availability of essential medicines and innovation.

5.1. Delivering higher-quality care

When it comes to accessing high-quality cancer care, and particularly for timely diagnosis and treatment, patients are still faced with substantial differences in the standards of care, leading to unacceptable disparities across the EU. For instance, survival rates following treatment for breast cancer vary by 20% between countries and the five-year survival for colon cancer ranges from 49% to 68%⁵⁵.

Flagship 5: The Commission will establish, by 2025, an **EU Network** linking recognised **National Comprehensive Cancer Centres** in every Member State⁵⁶. It will facilitate the uptake of quality-assured diagnosis and treatment, including training, research and clinical trials across the EU. This cross-border collaboration will improve

patients' access to high-quality diagnostics and care and the latest innovative treatments. It can also help with patient mobility to ensure adequate treatment for patients with complex conditions. A new 'EU Cancer Treatment Capacity and Capability Mapping' project will help to map and share the different capabilities and expertise available across the EU.

This action will help deliver higher-quality care and reduce inequalities across the EU, while enabling patients to benefit from diagnosis and treatment close to home. The Cancer Plan aims to ensure that **90% of eligible patients** have access to such **centres by 2030**.

53 The action is expected to help increase the five-year net survival rate of patients with cervical, breast and colorectal cancer by 2025. It will also reduce existing inequalities in survival rates between EU Member States.

54 Principle 16 of the European Pillar of Social Rights.

55 https://ec.europa.eu/health/sites/health/files/state/docs/2018_healthatglance_rep_en.pdf

56 The establishment of national Comprehensive Cancer Centres and their networking at EU level are being recommended by the Horizon Europe Cancer Mission Board and the EU Joint Action CanCon, <https://cancercontrol.eu/>.

The EU Network will be supported by the existing four rare-cancer focused European Reference Networks⁵⁷ and a group of **newly-created Reference Networks**. These new Reference Networks will look at specific, challenging cancer conditions, which will benefit from cross-border cooperation and EU expertise. These conditions include metastatic diseases, co-morbidities in cancer care, complex cancers with poor

prognosis, paediatric cancers and specific conditions related to genomics in cancer care, palliative care and survivorship. The networks will connect experts, share expertise across the EU and provide answers, certainty and hope to patients where before there was none.

5.2. Ensuring a high-quality health workforce

High-quality cancer care depends on a high-quality workforce. Patients deserve the best care possible, and health professionals need support to ensure they can receive training and keep updating their skills during their professional lives. This support should take into account the strong gender dimension in the health and care workforce. Europe's Beating Cancer Plan will use training and continuous education, including on digital skills, AI, genomics, and personalised medicine to build a stronger **multidisciplinary cancer workforce**.

The Commission will launch an **'Inter-specialty cancer training programme'** in 2021. Focusing on oncology, surgery and radiology, the programme will set out to deliver a more skilled and mobile cancer workforce through cross-border training and information-sharing. The training will also include a focus on patients' quality of life and well-being, including mental, psychosocial and nutritional

support, along with patient empowerment. It will help Member States address skills gaps and equip their health workforce with personnel trained in cancer prevention, early detection, diagnosis, treatment, rehabilitation and survivorship.

The programme will help optimise collaboration among cancer specialists and ultimately benefit diagnosis, treatment and follow-up for cancer patients. It will feed into the work of the Pact for Skills large-scale partnership in the health sector announced in the Skills Agenda for sustainable competitiveness, social fairness and resilience⁵⁸ which aims at securing training opportunities for health professionals to up and re-skill. It also complements ongoing trainings offered through the European Institute of Innovation and Technology, the Marie Skłodowska-Curie Actions and the Erasmus+ programme.

5.3. Ensuring access to essential medicines and innovation

Recent developments in cancer diagnosis and treatment have dramatically improved survival rates and quality of life for cancer patients. However, the financial costs are high, and they vary significantly across the EU. Moreover, shortages of cancer medicines have increased considerably, with serious consequences for patients. Overcoming these challenges is an important goal for Europe's Beating Cancer Plan, and for the Commission as a whole.

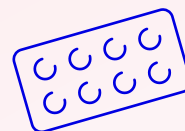
It takes, on average, almost 15 years to develop new medicines. Repurposing of existing medicinal products can be a viable strategy to reduce timeframes, decrease development costs and improve success rates.

The recently adopted **Pharmaceutical Strategy** for Europe, and the announced reform of the basic pharmaceutical legislation, will propose ways to improve access to medicinal products, including to generic and biosimilar medicines. The Strategy also started initiatives to secure supply chains and respond to shortages of medicines, and will seek to boost innovation to address the unmet needs of patients, while making sure treatments remains affordable.

In 2021, the Commission will launch an **EU platform to improve access to cancer medicines** to support the repurposing of existing medicines. It will devise and test models for closer collaboration among stakeholders and will leverage, pool and share

57 https://ec.europa.eu/health/em_en.

58 <https://ec.europa.eu/social/main.jsp?catId=1223&langId=en>.



existing data using new digital tools. Building on experiences with repurposing of medicines to treat COVID-19⁵⁹, an additional **project** will be launched that uses High-Performance Computing to **rapidly test existing molecules and new drug combinations**. Starting with **cancers with poor prognosis and rare cancers**, this work will involve analysing and leveraging new innovative, and promising treatments.

Flagship 6: The new **‘Cancer Diagnostic and Treatment for All’** initiative, to be launched by end of 2021, will help improve access to innovative cancer diagnosis and treatments. It will use the ‘next generation sequencing’ technology for quick and efficient genetic profiles of tumour cells, allowing Cancer Centres to share cancer profiles and applying the same or similar diagnostic and therapeutic approaches to patients with comparable cancer profiles. The initiative will ultimately help optimise cancer diagnosis and treatment and reduce unequal access to personalised medicine in cancer care, greatly benefitting patients.

The new **legal framework for clinical trials** will apply by the end of 2021. This will introduce a highly coordinated, robust and agile system for the

assessment and oversight of clinical trials in the EU. Streamlined procedures will facilitate the conduct of trials helping to bring innovation to patients. Timely adoption of the proposal for a Regulation on **Health Technology Assessment (HTA)** by the Council and the European Parliament would help ensure speedy access to innovative cancer diagnosis and treatments. A permanent framework for EU cooperation on HTA could provide Member States with high-quality and timely HTA reports, and would enable them to share resources, expertise and capacity. This is particularly relevant to highly specialised cancer diagnostic procedures and treatments.

To support the security of supply of radioisotopes for cancer diagnosis and care, and to enhance the quality and safety of radiation technology in medicine, the Commission will present a new action plan under the **Strategic Agenda for Medical Ionising Radiation Applications of nuclear and radiation technology (SAMIRA)**. It will further provide guidance on EU research and innovation, and support the education of medical professionals in radiology, radiotherapy and nuclear medicine, in close cooperation with the ‘Inter-specialty training programme’.

5.4. Building on the promise of personalised medicine for cancer prevention, diagnosis and treatment

Every patient is different, and no cancer is the same. Preventing and treating cancer as effectively as possible calls for a personalised approach tailored to the characteristics of the patient and the disease. Personalised cancer medicines can significantly improve prevention, detection and prognosis for cancer patients and can reduce the risk of adverse effects. They should be part of the future of cancer medicines. In addition, the capacity to access genomic data cross-border in the EU will give researchers and clinicians the ability to analyse and compare patients’ genetic and clinical information. This will help predict the potential development of cancers, detect the disease earlier, and decide on the most effective treatments.

The new **Partnership on Personalised Medicine**, due to be set up in 2023 and funded under

Horizon Europe, will identify priorities for research and education in personalised medicine, support research projects on cancer prevention, diagnosis and treatment, and make recommendations for the roll-out of personalised medicine approaches in daily medical practice. As a preparatory action to the Partnership, the Commission will establish a **roadmap to personalised prevention**, identifying gaps in research and innovation, and will support an approach to map all known biological anomalies leading to cancer susceptibility, including hereditary cancers.

To support Member States in making the most of the rapid evolution of genomics in cancer prevention, diagnosis and treatment, in 2021 the Commission will launch, the **‘Genomic for Public Health’ project**. The project will complement the **1+ Million Genomes**

⁵⁹ <https://ec.europa.eu/digital-single-market/en/news/using-european-supercomputing-treat-coronavirus>.

Initiative⁶⁰, which has cancer among its main use cases, and is expected to give secure access to large amounts of genomic data for research, prevention and personalised medicine purposes. Actions under the project, funded by the EU4Health programme, will also target the identification of **genetic predisposition** of individuals to develop cancers, opening new perspectives to **personalised risk-assessment and targeted cancer prevention**. In addition, it will help Member States develop guidelines and recommendations to better determine who and what to test, organise health services to implement genetic testing, and provide⁶¹ specific education and training for health workers to advance our understanding of cancer control.

Flagship 7: Alongside the 'Genomic for Public Health' project, the **European Initiative to Understand Cancer (UNCAN.eu)**, planned to be launched under the foreseen Mission on Cancer to increase the understanding of how cancers develop, will also help identify individuals at high risk from common cancers using the polygenic risk scores technique⁶². This should facilitate personalised approaches to cancer prevention and care, allowing for actions to be taken to decrease risk or to detect cancer as early as possible.

Already from 2021, new and existing biomedical research infrastructures networks will also provide **tailored support to researchers working on personalised cancer treatments**. This will include free use of advanced methodologies, technologies, tools and equipment to work on new cancer therapies ranging from initial discovery to novel advanced therapy medicinal products and radiotherapy. It will also include support to further explore and develop the area of therapeutic and **personalised cancer vaccination**, which has taken a massive leap forward with the recent approval of mRNA-based vaccines for COVID-19 showing that this new technology is ready for wider deployment. Patients with advanced melanoma, and head and neck cancers have for example already successfully been treated with mRNA technology.

New platforms, hosted on the **European Open Science Cloud**⁶³, will furthermore support interdisciplinary

cancer research and enable the delivery of advanced personalised treatments. This collaboration will allow researchers to access, analyse and process research data across disciplines and national borders, including through the European Reference Networks and the EU Network of Comprehensive Cancer Centres while fully complying with data protection laws.

Personalised medicine will also benefit from **High-Performance Computing**. Combining an individual's health data with real-time monitoring through smart devices and pharmacokinetic will form the basis to create a digital twin (i.e. virtual representation) of each person. This will leverage the potential of personalised medicine approaches, and enhance targeted screening and prevention strategies, rapid diagnoses and individualised therapeutic concepts.

To further explore the potential of the innovation of digital technology on cancer treatment, the Commission will from 2021 support **new collaborative projects** bringing together relevant stakeholders and expertise to make use of new approaches to data analytics, **using High-Performance Computing and AI**. These projects will support efforts to advance personalised medicine, focusing initially on **cancers with poor prognosis** such as pancreatic, or head-and-neck cancers. Also in 2021, the Innovative Medicines Initiative will launch projects on the use of AI to provide data-driven decision support to health professionals, carers and patients in prevention, diagnosis and treatment, as well as projects on overcoming drug resistance in cancer and on the added value of proton therapy in oesophageal cancer.

60 <https://ec.europa.eu/digital-single-market/en/european-1-million-genomes-initiative>

61 Policy Paper on Public Health Genomics in Cancer, https://cancercontrol.eu/archived/uploads/PolicyPapers27032017/Policy_Paper_1_Genomics.pdf.

62 Cancer is a disease that can be affected by changes in either one or many genes, frequently coupled with environmental factors. A 'polygenic risk score' can inform people about their risk of developing a disease, based on the total number of genetic changes related to specific diseases, including some types of cancers.

63 https://ec.europa.eu/info/research-and-innovation/strategy/goals-research-and-innovation-policy/open-science/eosc_en



Flagship initiatives on cancer care

- ▶ Establish an EU Network linking recognised National Comprehensive Cancer Centres in every Member State to improve access to high-quality diagnosis and care – 2021- 2025.
- ▶ Launch a ‘Cancer Diagnostic and Treatment for All’ initiative to improve access to innovative cancer diagnosis and treatment – 2021-2025.
- ▶ Launch UNCAN.eu to help identify individuals at high risk from common cancers – 2021-2025.

Other actions

- ▶ Launch an ‘Inter-specialty training programme’ focusing on oncology, surgery and radiology to optimise diagnosis and treatment of cancer patients – 2021-2025.
- ▶ Establish a group of new Reference Networks on specific cancer types – 2022-2025.
- ▶ Create an EU platform to support the repurposing of existing medicines – 2021-2025.
- ▶ Adopt the proposal for a Regulation on Health

Technology Assessment – 2021.

- ▶ Present SAMIRA Action Plan to ensure quality and safety of radiation technology and the supply of radioisotopes of medical importance for diagnostic and treatment – 2021- 2025.
- ▶ Set up a Partnership on Personalised Medicine – 2023.
- ▶ Develop a roadmap towards personalised prevention – 2023-2025
- ▶ Launch the ‘Genomic for Public Health’ project to support Member States in making the most of the rapid evolution of genomics – 2021-2025.
- ▶ Launch a new project using High-Performance Computing to rapidly test existing molecules and new drug combinations – 2023-2025.
- ▶ Assist researchers working on personalised cancer treatments through tailored support and new digital platforms – 2021-2027.
- ▶ Support collaborative projects on cancer diagnostics and treatment using High-Performance Computing and AI – 2021-2027.

6. IMPROVING THE QUALITY OF LIFE FOR CANCER PATIENTS, SURVIVORS, AND CARERS

Thanks to advances in early detection, effective therapies and supportive care, survival rates have increased dramatically. The number of cancer survivors is growing every year, and is now estimated at over 12 million in Europe. This figure includes around 300 000 childhood cancer survivors, a number which is also expected to rise substantially in the years to come. While this is a reason for optimism, survivors, their families and carers can experience significant challenges. These challenges could often be avoided or mitigated by cooperation between health and social care systems, and as well as with employers. In this context, we should no longer focus on ‘how long’ people live after diagnosis, but rather on ‘how well and how long’ they live. Europe’s Beating Cancer Plan aims not only to ensure that cancer patients survive their illness, but that they live long, fulfilling lives, free from discrimination and unfair obstacles.

Flagship 8: Funded by the EU4Health programme, the Commission will launch the **‘Better Life for Cancer Patients Initiative’**. It aims to provide, by 2022, a ‘Cancer Survivor Smart-Card’ to summarise their clinical history and facilitate and monitor follow-up care including the patients’ own experience. This personalised and voluntary ‘Card’, in the form of an interoperable portable eCard or app will connect the patient with health professionals to improve communication and coordination around medical follow-up. It will be complemented by the creation of a virtual **‘European Cancer Patient Digital Centre’** under the foreseen Horizon Europe Mission on Cancer, to support a standardised approach to the voluntary exchange of patients’ data and monitoring of survivors’ health conditions by 2023.

The most common issues that survivors face stem from insufficient management of late and long-term effects of treatment; poor coordination and lack of communication among healthcare providers; unmet psychosocial needs, and issues related to rehabilitation, emotional distress, tumour recurrence, and metastatic disease. Cancer survivors also face **obstacles to return to work**. Studies indicate that the professional situation of people diagnosed with cancer often considerably deteriorate years after the diagnosis. Measures to facilitate social integration and re-integration in the workplace, including an early assessment and adaptation of working conditions for cancer patients should be integral parts of the patient pathway⁶⁴. In addition, because of their medical history, many cancer survivors in long-term remission often experience an unfair treatment in **accessing to financial services**. They often face prohibitively high premiums, although they have been cured for many years, even decades⁶⁵.

The Commission will foster its support to Member States in promoting **re-skilling and up-skilling programmes** to help cancer survivors re-join the labour market, with possible funding support from the **European Social Fund Plus**. In 2022, the Commission will launch a **new study related to the return to work of cancer survivors**, mapping national employment and social protection policies and identifying obstacles and remaining challenges.

Gaps in access to social protection can put the welfare of individuals at risk, increase economic uncertainty for both patients and survivors, and can lead to a poorer health outcomes. In the upcoming Occupational Safety and Health Strategic Framework, the Commission will look into psycho-social risks and disadvantaged groups, including cancer survivors. In addition, the action plan to implement the principles of the **European Pillar of Social Rights**⁶⁶ will cover working conditions, social protection and inclusion, health and care promotion for all workers, including those affected by cancer. Furthermore, the recent Green Paper on Ageing⁶⁷ is launching a wide debate, including on access, quality and affordability of care and long-term impacts on social protection systems.

The role of **informal carers**, in particular family members, is crucial to support and provide care to cancer patients. Such care activities often come with sacrifices, including difficulties in reconciling work and caring activities, loss of current income due to reduction of working hours and long-term impacts on their old age income. This also perpetuates inequalities between genders. Moreover, carer's responsibilities can also affect their physical well-being - and in particular their mental health. The Commission will, therefore also ensure that Member States fully transpose the **Directive on work-life balance for parents and carers**, which introduces leave for carers and the possibility to request flexible working time arrangements. The forthcoming **Strategy on the Rights of Persons with Disabilities 2021-2030** intends to promote reasonable accommodation at work for people with disabilities. In this respect, further support to adapt work patterns for those cancer patients and survivors who are considered as people with disabilities will be important.

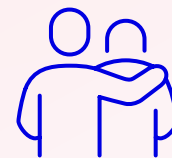
Through Europe's Beating Cancer Plan, the Commission will closely examine practices in the area of **financial services** (including insurance) from the point of view of fairness towards cancer survivors in long term remission. In the short term, the Commission will work with relevant stakeholders to address access to financial products for cancer survivors. The Commission will also engage in dialogue with businesses to develop a code of conduct to ensure that developments in cancer treatments and their improved effectiveness are reflected in the business practices of financial service providers to ensure that only necessary and proportionate information is used when assessing the eligibility of applicants for financial products, notably credit and insurance linked to credit or loan agreements.

64 Cancer Control Joint Action (CanCon): https://cancercontrol.eu/archived/uploads/images/Guide/042017/CanCon_Guide_7_Survivorship_LR.pdf

65 Patient organisations refer to this issue as so called "Right to be forgotten", which however should not be confused with the same terminology used in the context of the General Data Protection Regulation .

66 https://ec.europa.eu/info/european-pillar-social-rights-0/european-pillar-social-rights-20-principles_en

67 COM (2021) 50 final, 27.01.2021.



Flagship initiatives on quality of life for cancer patients and carers

- ▶ Launch the 'Better Life for Cancer Patients Initiative', including a 'Cancer Survivor Smart-Card' and the creation of a virtual 'European Cancer Patient Digital Centre' to support the exchange of patients' data and monitoring of survivors' health conditions – 2021-2023.

Other initiatives:

- ▶ Ensure full implementation of the Directive on work-life balance for parents and carers – 2021-2022.
- ▶ Address fair access for cancer survivors to financial services (including insurance), via a code of conduct and a reflection on long-term solutions – 2021-2023.

7. REDUCING CANCER INEQUALITIES ACROSS THE EU

A number of indicators show major differences in cancer prevention and care between and within Member States. These inequalities can be seen in access to prevention programmes, in rates of early cancer detection, diagnosis, treatment, survival and measures to improve quality of life of cancer patients and survivors. For instance, mortality rates from colorectal cancer are substantially higher among men than among women⁶⁸. Differences in survivorship and access to care can be explained by gender differences, a combination of lower exposure to risk factors, better access to screening programmes and health services, and better capacity to absorb the social and financial consequences of cancer. Furthermore, persistent discrepancies can also be observed for women⁶⁹, older people, persons with disabilities, and disadvantaged and marginalised groups, like people with a minority racial or ethnic background and people living in poverty.

These inequalities are unacceptable in a European Health Union that seeks to protect everyone. There should be no first- and second-class cancer patients in the EU. Europe's Beating Cancer Plan aims to address these inequalities across the entire disease pathway. It will tackle these issues also in conjunction with the actions under the Pharmaceutical Strategy for Europe and the forthcoming EU Disability Rights Strategy.

Flagship 9: In 2021, the Commission will establish a **Cancer Inequalities Registry**. It will identify trends, disparities and inequalities between Member States and regions. Alongside regular qualitative assessments of the country-specific situation, the Registry will identify challenges and specific areas of action to guide investment and interventions at EU, national and regional level under Europe's Beating Cancer Plan.

Several actions outlined in the Cancer Plan will address inequalities between and within EU Member States. The updated Council Recommendations on cancer screening will advise Member States on the latest approaches to cancer screening, coupled with quality assurance schemes and accreditation for screening and treatment of breast, colorectal and cervical cancer. The EU Network of Comprehensive Cancer Centres will support Member States in establishing at least one National Comprehensive Cancer Centre by 2025⁷⁰, ensuring that 90% of eligible patients have access to such Centres by 2030.

To reduce inequalities in access to healthcare services, Member States can benefit from EU Cohesion Policy Funds, for instance through the use of mobile healthcare units for cancer screening, or laboratory diagnostics. This is particularly important for those living in the most deprived and isolated communities with restricted access to large urban centres. These projects aim to provide healthcare and cancer

68 https://ec.europa.eu/health/sites/health/files/state/docs/2020_healthatglance_rep_en.pdf.

69 This is for instance due to comparatively lower financial resources women have at their disposal to absorb the monetary consequences of cancer and less time resources for treatment and recovery, due to the persistent gender pay, earnings, and pension gaps and women's disproportionate caring responsibilities, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0152>.

70 For larger Member States, one Centre per 5 million inhabitants is recommended.

services, with an emphasis on disease prevention and early diagnosis. The mobile units, staffed with a multidisciplinary team, visit communities on a regular basis and connect with established health facilities. The Commission will also promote the use of advanced mobile technologies by healthcare providers through the future EU4Health and Digital Europe programmes. Digital Europe supports the deployment of fast connectivity in line with the Gigabit Society targets for 2025⁷¹. The EU will offer priority funding to projects involving health facilities with a public service mission. Finally, by supporting the delivery of affordable, accessible and fair mobility for all, the Smart and Sustainable Mobility Strategy will help to better connect people and patients in remote areas with hospitals and healthcare hubs.

The COVID-19 pandemic has even further hit the most disadvantaged groups in our society, including cancer patients. Isolation and containment measures due to the COVID-19 pandemic have affected their follow-up care and quality of life. The EU is working to ensure continued and equitable access to care, including in crisis situations, and Europe's Beating Cancer Plan is a key part of these efforts.

Actions in this area include **strengthening and integrating telemedicine and remote monitoring** in health and care systems by supporting research, innovation and deployment actions with EU funds. This will help to protect immunosuppressed cancer patients from exposure to infectious diseases such as COVID-19. These developments can also support

patients in remote or rural areas. Furthermore, the virtual consultation model of the European Reference Networks will be promoted to support knowledge-sharing among healthcare professionals. Through the EHDS, the Commission will work to remove barriers to cross-border provision of digital health services. Measures will also include training and continuous education for the cancer workforce.

Flagship initiative on inequalities

- ▶ Launch a Cancer Inequalities Registry to map trends in key cancer data identifying inequalities between Member States and regions – 2021-2022.

Other actions

- ▶ Strengthen and integrate telemedicine and remote monitoring in health and care systems; promote the virtual consultation model of the ERNs – 2021-2023.
- ▶ Improve the overall resilience, accessibility and effectiveness of European health systems to safeguard provision of cancer care in future health crises – 2021-2025.
- ▶ Mainstream equality action in other areas addressed by Europe's Beating Cancer Plan such as screening and high-quality cancer care – 2021-2025.

8. PUTTING CHILDHOOD CANCER UNDER THE SPOTLIGHT

The European Union can and should do more to protect our children from cancer. In 2020, over 15,500 children and adolescents were diagnosed with cancer, with over 2,000 young patients losing their lives to it⁷². In fact, cancer is the principal cause of death by disease in children beyond the age of one. However, important differences exist between childhood and adult cancers in terms of the type of cancer, how far it spreads, and how it is treated. For example, by the time they are diagnosed, 80% of paediatric cancers have already spread to other parts of the body, compared to about 20% of adult cancers.

Flagship 10: In 2021, the Commission will launch the **'Helping Children with Cancer Initiative'** to ensure that children have access to rapid and optimal detection, diagnosis, treatment and care. This initiative will be funded under the future EU4Health programme to facilitate access to early diagnosis and quality treatment through the new Network of Comprehensive Cancer Centres. It will support training and enable the sharing of best practice and standards of care for children with cancer, complementing the actions implemented by the new European Reference Networks.

⁷¹ 'Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society' (COM(2016) 587 final).

⁷² Most recent estimates from the European Cancer Information System (ECIS) for the EU-27 countries.



Up to 30% of children affected by cancer suffer severe long-term consequences. As the number of childhood cancer survivors continues to grow, comprehensive care, treatment and follow-up are essential to help young patients make a good recovery and enjoy an optimal quality of life⁷³. The new **'Cancer Survivor Smart-Card'** will also address the specificities of childhood cancer survivors, including long-term monitoring of outcomes and potential toxicity of treatments, rehabilitation, psychological support, educational modules, connectivity with healthcare staff, and information about past clinical history. The Card will also help tailor follow-up care for the child patients, with the input of carers and in agreement with the family. Beyond the individual level, the upgraded **European Cancer Information System** with a new section, specifically tailored and dedicated to childhood cancers will facilitate monitoring and further research. In addition, the revision of the **Orphan and Paediatric Regulations** will be reviewed to improve the conditions for studying and authorising new cancer medicines for use in children.

The Commission will establish in 2022 a new **'EU Network of Youth Cancer Survivors'** to complement the actions under the 'Helping Children with Cancer Initiative', which will connect young cancer survivors and their families as well as informal and formal carers. The Network will help strengthen long-term follow-up in cancer care plans at national and regional level. Children, adolescents and young adult survivors

will be nominated as Network representatives in Member States. Particular attention should be given to limit the disruptive impact of cancer on the education of children and young people affected by cancer, either as patients or carers.

Young cancer patients will also be supported under the foreseen **Horizon Europe Cancer Mission**. For example, the planned **'Childhood cancers and cancers in adolescents and young adults: cure more and cure better'** initiative could increase understanding of cancer initiation and progression and boost the transformation of paediatric cancer care with evidence based information to advance diagnostics, treatment and survivorship support.

Flagship initiative on paediatric cancer

- ▶ Launch the 'Helping Children with Cancer Initiative' to ensure that children have access to rapid and optimal detection, diagnosis, treatment and care – 2021.

Other initiatives

- ▶ Establish an 'EU Network of Youth Cancer Survivors' – 2021-2022.
- ▶ Launch the Childhood cancers and cancers in adolescents and young adults' initiative to increase understanding of paediatric cancer – 2022-2025.

9. FUNDING

Europe's Beating Cancer Plan will be implemented, enabled and supported using the whole range of Commission funding instruments with a **total of €4 billion** being earmarked for actions addressing cancer. A substantial share of the future **EU4Health programme**, totalling €1.25 billion, will be used to support actions and initiatives outlined in the Cancer Plan. For instance, major initiatives that will receive support include the 'EU Mobile App for Cancer Prevention', the 'EU Network of Comprehensive Cancer Centres', 'Helping Children with Cancer', 'Better Life for Cancer Patients', the 'Knowledge Centre on Cancer' and the 'EU Inter-specialty Training'.

Financial support will also be provided through other EU funding instruments, reflecting the whole-of-government approach and diversity of actions coming under Europe's Beating Cancer Plan. For example, the **Horizon Europe Framework Programme for Research and Innovation**⁷⁴ could provide a total of up to €2 billion to support the foreseen Mission on Cancer and other cancer related research projects including for research infrastructures and the Partnerships. Erasmus+, the European Institute for Technology and Marie Skłodowska-Curie actions could provide up to a total of €500 million for projects in education, training and research in the

⁷³ https://siop.eu/media/wp-content/uploads/2013/09/European_Standards_final_2011.pdf

⁷⁴ Beside the proposed Cancer Mission, Horizon Europe finances research and pilot projects under the thematic areas in the "Health" cluster with a EUR 8.2 billion budget.

field of cancer⁷⁵. The **Digital Europe programme** will provide financial support of up to €250 million for cancer-related project, and support wider digital investments, such as relating to electronic data, cybersecurity and digital skills from which the health sector will benefit.

The **Cohesion Policy Funds** (European Regional Development Fund, Cohesion Fund and European Social Fund Plus) will provide support to Member States and their regions to improve their health systems' resilience, accessibility and effectiveness. In this context, funding will support actions ranging from health promotion and disease prevention, improving access to prevention, early detection and screening, and treatment, as well as research and development projects relating to oncology. The funds could, for example, invest in equipment and infrastructure in oncology wards and prevention centres, in the development and implementation of telemedicine, eHealth applications and tools, or in health workforce skills for cancer care. While most interventions will be implemented in national or regional programmes, in line with state aid rules, the Interreg programmes under the European Regional Development Fund also offer cross-border or transnational funding possibilities⁷⁶.

As Cohesion Policy Funds are under shared management, Member States and their national and regional authorities will be responsible for setting priorities on the basis of existing needs, and carrying out these investments. Member States are strongly encouraged to make full use of all options to implement the measures included in the Cancer Plan.

Under the 'Next Generation EU' EU budget and

recovery plan, an unprecedented **Recovery and Resilience Facility**, with a budget of €672.5 billion in non-repayable support and loans, is being created to finance reforms and investments. The Facility will support the recovery from the COVID-19 pandemic and help overcome its economic and social impact. Member States are prompted to identify investments that may include health infrastructure, equipment, digital transformation of healthcare, manufacturing capacity for medicines and medical devices, in particular if they are linked to addressing the Country Specific Recommendations, which guide the reforms and investment to be supported by the Facility, including in cancer care.

In addition, the Commission has put forward a proposal for a **Technical Support Instrument**⁷⁷, to provide practical support to all EU Member States who express interest in institutional, administrative and growth-enhancing reforms.

Cancer-related investments by Member States and public and private entities could also be mobilised through EU budget guarantees, for instance through the InvestEU programme. It will offer loans and equity financing for investments in hospitals, primary care and community care facilities, eHealth, the healthcare workforce, and in innovative health products, services and care models. To facilitate the use of EU funding instruments for cancer investment, the Commission will **set up a knowledge sharing mechanism to inform Member States** about the different EU funding mechanisms and how they can be utilised.

10. INTERNATIONAL COLLABORATION AND COORDINATION

The Commission has a longstanding collaboration with international organisations such as WHO and OECD on health issues including on cancer. This cooperation will continue to be pursued for

instance with WHO within the recently agreed framework of collaboration on non-Communicable diseases⁷⁸, which has a key focus on cancer. In addition the Commission will re- inforce its work

75 Due to the bottom-up nature of these programmes the funding cannot be provided through dedicated calls. Therefore this indicative amount reflects the budget of previous cancer-related projects in the period 2014- 2020.

76 E.g. under the cross-border cooperation Interreg programme for the Euregio Meuse-Rhine (Aachen-Maastricht- Liège), the university hospitals cooperate on cancer treatment: <https://www.oncocare.eu/> or on rare diseases: <https://www.emradi.eu/en/about-emradi>.

77 The Technical Support Instrument (TSI) is the successor to the Structural Reform Support Programme (SRSP)

78 Joint Statement of the European Commission and the WHO Regional Office for Europe "A deeper and result oriented partnership for health in Europe" of 14 September 2020.



with specialised agencies and actors such as WHO's International Agency for Research on Cancer⁷⁹, or the European Network of Cancer Registries⁸⁰ to facilitate collaboration to take action against cancer also beyond the borders of the EU. Furthermore, continued EU support to strengthening health systems in partner countries and advancing universal health coverage including primary health care, directly contributes to improving prevention, detection, treatment and care of cancer.

Third countries will benefit from the work and actions under the Europe's Beating Cancer Plan, notably through collaborative research within the framework of Horizon Europe. To effectively tackle global challenges such as cancer, international

cooperation will be significantly strengthened within Horizon Europe to ensure access to talent, knowledge, know-how, peer to peer experts, facilities and markets worldwide. In addition, outputs and evidence generated by the Cancer Plan, notably best practices, lessons learnt, guidelines or screening programmes, will be made available and can be implemented and adapted to the national contexts of third countries. Accompanying partner countries in cancer campaigns and outreach associating EU Delegations, international actors and UN agencies on the ground is key for an effective impact. For example, the guidelines, or systematic reviews produced through the European Commission Initiative on Breast Cancer⁸¹ are already, or will be used in several countries outside of the EU⁸².

11. IMPLEMENTATION AND GOVERNANCE: DELIVERING TOGETHER

The Commission will establish the EU **Cancer Plan Implementation Group**, to align actions and policies across the European Commission and other EU institutions. The group will meet regularly to discuss and review implementation of the Cancer Plan and of the foreseen Horizon Europe Mission on Cancer. It will work closely with:

- the European Parliament committees that deal with cancer-related issues;
- Member States (through the Steering Group on Health Promotion, Disease Prevention and the Management of Non-Communicable Diseases);
- the Cancer Mission Board functioning as a scientific advisory group; and
- a stakeholder contact group, in particular consisting of patient groups, established under the Commission's Health Policy Platform.

The Commission will be meeting with representatives of these institutions and stakeholder groups in regular

intervals, at least twice per year. This approach will enable EU institutions and stakeholders to work together more consistently and make ownership of Europe's Beating Cancer Plan fully inclusive.

The implementation of the Cancer Plan will be monitored through an implementation roadmap and progress indicators. The roadmap and indicators will reflect the actions included in the Cancer Plan and will undergo regular review by the Implementation Group. Building on the augmented European Cancer Information System, the Commission will also regularly collect and publish relevant data to monitor trends and feed into the Cancer Inequalities Registry. This will also help monitor progress for all actions in the Cancer Plan, including their impact on competitiveness, the environment, and health beyond cancer.

Europe's Beating Cancer Plan will be reviewed by the end of 2024. The review will assess whether the action taken is sufficient to achieve the objectives, or whether additional measures are necessary.

79 <https://www.iarc.who.int/>.

80 <https://www.encreu/>.

81 <https://healthcare-quality.jrc.ec.europa.eu/european-breast-cancer-guidelines>

82 Bahrain, Chile, China, Mexico, Tunisia.

12. CONCLUSION

Europe can collectively do more. In a strong European Health Union, addressing cancer needs to become a shared political, operational and scientific priority. Europeans expect and deserve to live in a society that protects them from avoidable cancers, that ensures early detection, and that provides equitable, affordable, high-quality and sustainable cancer care to those who need it. Europe's Beating Cancer Plan is an ambitious strategy that offers specific solutions to meet these expectations. It aims, first and foremost, to prevent cancer, and to ensure cancer patients, survivors, their families and carers can enjoy a high quality of life.

The COVID-19 pandemic has challenged the EU, its Member States and the population in unprecedented ways. However, of all the lessons learned in 2020, the clearest is that citizens have put health first among their priorities, and that they expect Europe to do more to protect it. The pandemic has shown that there is enormous strength in collaboration, solidarity and unity of purpose. This lesson also applies strongly to cancer prevention, treatment and care. The success of Europe's Beating Cancer Plan requires a whole-of-society effort that follows the 'Health in All Policies' approach.

Cancer care is no longer the responsibility of the health sector alone. It requires engagement and buy-in from a wide range of sectors and stakeholders. With ten flagship initiatives and multiple supporting actions that address the entire disease pathway, this is a plan for Europe. It is inclusive, giving everyone concerned a stake in its success; and, above all, it is people-centred, focusing on patients' needs throughout.

The European Commission invites all Member States, stakeholders and citizens across the EU to come together and ensure that Europe's Beating Cancer Plan delivers. Together, we can reverse the rising trend of cancer across the EU and secure a healthier, fairer and more sustainable future for all, in line with the United Nations Sustainable Development Goals. Together, we can strip away the fear and uncertainty that come with a cancer diagnosis – and replace them with knowledge, determination, dignity and hope. Together, we can make a difference and defeat cancer.

ANNEXES to the Communication from the Commission to the European Parliament and the Council Europe's Beating Cancer Plan

LIST OF ACTIONS¹

n°	ACTIONS	Timetable
A MODERN APPROACH TO CANCER: NEW TECHNOLOGIES, RESEARCH AND INNOVATION AT THE SERVICE OF PATIENT-CENTRED CANCER PREVENTION AND CARE (2)		
1	Flagship: Create a 'Knowledge Centre on Cancer' to facilitate the coordination of scientific and technical cancer-related initiatives at EU level.	2021
2	Flagship: Launch a 'European Cancer Imaging Initiative' to support the development of new computer aided tools to improve personalised medicines and innovative solutions.	2022
3	<p>Actions supporting cancer prevention and care through new cancer research and an innovative ecosystem:</p> <p>(1) Enable cancer patients to securely access and share electronic health records for prevention and treatment across borders through the European Health Data Space;</p> <p>(2) Develop a repository of digital twins in healthcare, including for more individual cancer treatment;</p> <p>(3) Expand the European Cancer Information System (ECIS);</p> <p>(4) Launch Horizon Europe partnerships: the Innovative Health Initiative & the Partnership on Transforming Health and Care Systems.</p>	2021-2025
SAVING LIVES THROUGH SUSTAINABLE CANCER PREVENTION (3)		
4	Flagship: Vaccinate at least 90% of the EU target population of girls and to significantly increase the vaccination of boys and invest in related infrastructures to pursue the elimination of cancers caused by Human papillomavirus .	2021-2030
Improving health literacy on cancer risks and determinants (3.1)		
5	<p>Update and boost implementation of European Code Against Cancer:</p> <p>(1) Develop and launch the 'EU mobile App for Cancer Prevention';</p> <p>(2) Support the project 'Health Literacy for Cancer Prevention and Care'.</p>	2021-2025
Achieving a Tobacco-free Europe (3.2)		
6	<p>Create a 'Tobacco Free Generation': by reviewing</p> <p>(1) Tobacco Products Directive;</p> <p>(2) Tobacco Taxation Directive; and</p> <p>(3) the legal framework on cross border purchases of tobacco by private individuals in view of legislative proposals; and</p> <p>(4) Update the Council Recommendation on Smoke-Free Environments;</p> <p>(5) Support Member States in full implementation of the Framework Convention on Tobacco Control.</p>	2021-2025
Reducing harmful alcohol consumption (3.3)		
7	<p>Intensified EU support to Member States and stakeholders with the implementation of best practices and capacity building to reduce alcohol related harm:</p> <p>(1) Review of EU legislation relating to the taxation of alcohol and cross-border purchase of alcohol products;</p> <p>(2) Proposal for mandatory labelling of the list of ingredients and nutrition declaration on alcoholic beverage label, as well as health warnings;</p> <p>(3) Support Member States in the implementation of evidence-based brief interventions;</p> <p>(4) Reduce the exposure of young people to online marketing of alcoholic beverages through monitoring the implementation of the Audiovisual Media Service Directive.</p>	2021-2025

1. The measures presented in this action plan will all need to be taken forward in line with the better regulation principles, including evaluations and impact assessments as appropriate.

Improving health promotion through access to healthy diets and physical activity (3.4)		
8	<ul style="list-style-type: none"> (1) Review of EU school fruit, vegetables and milk scheme; (2) Propose mandatory front-of-pack nutrition labelling; (3) Commission report on the implementation of the provisions of the Audiovisual Media Services Directive (AVMSD) including those on commercial communications on unhealthy food and drinks; (4) Develop and implement guidance for codes of practice on reducing unhealthy food marketing to children, including online marketing through the provisions of AVMSD and a Joint Action of best practices in nutrition ("Best ReMap"); (5) Publication of a study mapping fiscal measures and pricing policies on sugars, soft drinks and alcoholic beverages. 	2021-2025
9	Further reduction of the presence of carcinogenic contaminants in food by setting maximum level limits for more of these contaminants.	2021-2025
10	<ul style="list-style-type: none"> (1) HealthyLifestyle4All support to promotion of healthy lifestyles for all generations; (2) Initiatives under the Sustainable Urban Mobility Planning Guide on linking transport and health; (3) Revision of the Urban Mobility Package to promote and support sustainable and healthy transport and mobility. 	2021-2023
Reducing environmental pollution (3.5)		
11	Align the EU's air quality standards more closely with the WHO guidelines.	2021-2023
12	Measures towards zero-emission mobility and reducing environmental pollution from transport under the Sustainable and Smart Mobility Strategy .	2021-2025
Reducing exposure to hazardous substances and radiation (3.6)		
13	Adopt a new Occupational Safety and Health Strategic Framework 2021-2027 .	2021-2027
14	Reduce workers' exposure to carcinogenic substances through the amendments of the Carcinogens and Mutagens Directive.	2021-2025
15	Revise EU limits for asbestos to further reduce workers' exposure.	2022-2024
16	Survey on exposure of workers to risk factors for cancer.	2021-2024
17	Support Member States in the implementation of the requirements of Council Directive on protection from ionising radiation , particularly from Radon .	2021-2025
18	Explore measures to prevent exposure to ultraviolet radiation including from sunbeds .	2023
19	Launch Horizon Europe Partnership on Assessment of Risks from Chemicals to strengthen EU capacities for chemical risk assessment.	2021-2025
Preventing cancers caused by infections (3.7)		
20	<ul style="list-style-type: none"> (1) Reduce liver cancer caused by Hepatitis B virus (by vaccination and investment in related infrastructures) and prevention of liver cancer caused by Hepatitis C virus and gastric cancer caused by Helicobacter pylori (by treatment with antivirals and antimicrobials respectively); (2) Propose a Council Recommendation on vaccine preventable cancers. 	2021-2030

IMPROVING EARLY DETECTION OF CANCER (4)		
21	<p>Flagship: New 'EU Cancer Screening Scheme':</p> <p>(1) Revision of the Council Recommendation on cancer screening, including its update and proposal for possible extension to other cancers;</p> <p>(2) Cancer Imaging Initiative to support the development of new computer-aided tools to improve personalised medicine and innovative solutions;</p> <p>(3) Develop Guidelines and Quality Assurance schemes on cancer screening, diagnosis, treatment, rehabilitation, follow-up and palliative care for colorectal and cervical cancer, and updating the existing guidelines on breast cancer, including accreditation/certification programmes.</p>	2021-2025
22	Update the European Cancer Information System to monitor and assess cancer screening programmes .	2021-2022
ENSURING HIGH STANDARDS IN CANCER CARE (5)		
23	<p>Flagship:</p> <p>(1) Creation of 'National Comprehensive Cancer Centre(s)' in all Member States and EU network by 2025;</p> <p>(2) New cancer Reference Networks on cancer and cancer conditions in addition to the four existing ERNs;</p> <p>(3) EU cancer 'Treatment Capacity and Capability Digital Mapping' project.</p>	2021-2025
24	Flagship: ' Cancer Diagnostic and Treatment for All ' initiative to improve access to innovative cancer diagnosis and treatments.	2021-2025
25	Flagship: Launch the European Initiative to Understand Cancer (UNCAN.eu) .	2021-2025
26	Support the ' Cancer Workforce ', through the ' Inter-specialty training ' programme.	2021-2025
27	Create an ' EU platform to improve access to cancer medicines ' to support the repurposing of existing molecules with a harmonized and sustainable EU dimension.	2021-2025
28	Implementation of the legal framework for clinical trials .	2021-2022
29	Adoption of the Regulation on ' Health Technology Assessment '.	2021
30	Present SAMIRA Action plan to ensure quality and safety of radiation technology and the supply of radioisotopes of medical importance for diagnostic and treatment.	2021-2025
31	<p>(1) Set up Partnership on Personalised Medicine to identify priorities for research and education in personalised medicine, support research projects relevant to cancer prevention, diagnosis and treatment;</p> <p>(2) Development of a roadmap to personalised prevention.</p>	2023-2025
32	Launch the ' Genomic for Public Health ' project along with the 1+ Million Genomes Initiative , to ensure the access to large amounts of genomic data for research, prevention and personalised medicine.	2021-2025
33	<p>(1) Launch a new project using High-Performance Computing to rapidly test existing molecules and new drug combinations;</p> <p>(2) Support collaborative projects on cancer diagnostics and treatment using High-Performance Computing and AI;</p> <p>(3) Assist researchers working on personalised cancer treatments through tailored support and new digital platforms.</p>	2021 - 2027

IMPROVING THE QUALITY OF LIFE FOR CANCER PATIENTS, SURVIVORS AND CARERS (6)		
34	Flagship: 'Better life for cancer patients' initiative: (1) Create a tailor made ' Cancer Survivor Smart-Card ; (2) Create the ' European Cancer Patient Digital Centre ' supporting the exchange of patients' data and monitoring of survivors' health condition.	2021-2023
35	Address fair access for cancer survivors to financial services via development of a Code of Conduct and a reflection process on long- term solutions.	2021-2023
36	(1) Launch a study addressing issues related to the return to work; (2) Address in the Strategy on the Rights of Persons with Disabilities 2021-2030 the rights of cancer patients and survivors considered as persons with a disability; (3) Ensure full implementation of the Directive on work-life balance for parents and carers .	2021-2022
REDUCING CANCER INEQUALITIES ACROSS THE EU (7)		
37	Flagship: Establish a Cancer Inequalities Registry to map inequalities between Member States and regions.	2021-2022
38	(1) Strengthen e-health, telemedicine and remote monitoring systems ; (2) promote the virtual consultation model of the ERNs.	2021-2023
39	Improve resilience, accessibility and effectiveness of EU health systems to safeguard provision of cancer care in future health crises.	2021-2025
40	Mainstream equality action in areas addressed by Europe's Beating Cancer Plan such as screening and high-quality cancer care.	
PUTTING CHILDHOOD CANCER UNDER THE SPOTLIGHT (8)		
41	Flagship: 'Helping Children with Cancer Initiative': Create an ' EU Network of Youth Cancer Survivors '.	2021-2023
42	Launch the ' Childhood cancers and cancers in adolescents and young adults: cure more and cure better ' project to boost the transformation of paediatric cancer care.	2022-2025