

## A European Master Plan to join our forces in the fight against cancer

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### I. The decisive fight of the 21<sup>st</sup> century: the war against cancer

When divisions and egoism seem to endanger our European unity, it is time to remember what Europeans are capable of achieving when they work together. We must start from what really matters to the citizens, from what makes a difference in their lives. While Europe is threatened both internally and externally, we must not forget our most insidious enemy that we are not able to defeat. We have not won the war against cancer yet.

Cancer represents the first cause of death in an increasing number of European countries<sup>1</sup> and 40% of us will face cancer in our lives.<sup>2</sup> This is an enemy in continuous evolution, that quickly mutates and that takes over 100 different forms. So many people courageously go through this struggle every day, in the quiet of their homes. The feeling of being powerless, the difficulty of the loved ones to go on in the everyday life, the grief.

Today, only 1 in 2 cancer patients survive: this is not enough. If we truly pool all our knowledge and resources together, we can pursue ambitious goals so that, by combining prevention, early diagnosis and screening with personalized medicine, we could double the survival rate of bad prognosis tumours. In paediatrics, 80% of children are cured. Although this is a remarkable result, we can do much more and make sure at least 90% are cured by 2030. By reaching this goal, 30.000 more children around the world could be saved each year.<sup>3</sup> It is our lives and the lives of our loved ones that are at stake. That is why Europe must join forces and take up arms: the fight against cancer has to be an absolute priority of the next European Commission.

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<sup>1</sup> European Commission, Research and Innovation, Cancer:  
<https://ec.europa.eu/research/health/index.cfm?pg=area&areaname=cancer>

<sup>2</sup> Zentrum für Krebsregisterdaten:  
[https://www.krebsdaten.de/Krebs/DE/Content/Publikationen/Krebsgeschehen/Krebsgeschehen\\_node.html](https://www.krebsdaten.de/Krebs/DE/Content/Publikationen/Krebsgeschehen/Krebsgeschehen_node.html)

<sup>3</sup> WHO, Cancer in Children: <https://www.who.int/news-room/fact-sheets/detail/cancer-in-children>

## II. Seizing the digital wave: one key to the solution

While medicine is becoming increasingly digital, key technological advancements will shape innovation in the health sector all over the world: to find a cure for cancer will be one of the crucial research questions of the future. If we want to succeed, Europe must seize the great opportunities that are being created by revolutionary advancements in biomedicine, bioinformatics, Big Data and artificial intelligence to put patients at the centre and support them to go through this difficult path in the least painful way possible.

What makes cancer so dangerous is that it is such a complex disease. Tumours that come under the same umbrella term will often be quite different: for example, there are many types of breast cancer, but they are still collectively called breast cancer. In addition to this, tumours go through an evolutionary process due to their genetic instability, which means they can quickly become different and so become resistant to treatments that were previously working. In the last two decades, revolutionary progress has been made to deal with these issues. Immunotherapy, a treatment that involves taking medicines that encourage the immune system to fight cancer, has shown promising results alongside smart drug combinations, which use two or more already known drugs taken together to fight cancers. Advancements in genomic research and the reduction of cost for DNA sequencing is allowing research on tumour cell mutations to progress much faster. Further studies in epigenetics, will enable researchers to look deeper, beyond DNA and combine it with information about external factors.

From these remarkable developments in medicine and technology, a massive amount of data is being generated that holds great potential for new discoveries. However, such an amount of data cannot be collected and analysed traditionally. That is why it is crucial for Europe to combine the potential of biomedicine and Big Data to take the next step in cancer research and treatment. As medicine is ultimately based on previous knowledge and experiences, harnessing the opportunities provided by Big Data and artificial intelligence allows researchers and doctors to directly query the past to predict the future more accurately and more quickly. This can lead to breakthrough advancements in cancer prevention and early-detection, it can mean quicker diagnosis, improved testing capabilities of drugs as well as to allow for more tailored, personalized and quicker treatment of patients so that no precious time would be wasted.

Despite the impressive progress, a number of obstacles remain that prevent the full European potential in cancer research, treatment and patient support to be unleashed.

- Data and information are not always sufficiently shared and easily accessible, especially to remote and rural areas.
- Even when results are available thanks to open access initiatives, the amount of data is so vast that finding the desired piece of information may be like looking for a needle in a haystack.
- Access to appropriate technological infrastructure to analyse the data is often an issue and Europe excessively relies on foreign technology, especially from the USA and China, which raises dependency as well as security concerns.

- It still makes too much of a difference to get sick in the East rather than in the West of Europe: in fact, depending on the type of cancer a patient in the East will have 30% less chance to heal, a dramatic and unacceptable reality.<sup>4</sup> Similarly, there are fewer clinical trials currently taking place in the East compared to the West, which can make advancements more difficult to achieve: in EU-13 there are currently just under 5.000 clinical trials taking place, while in EU-15 there are over 26.000.<sup>5</sup>
- There is an increasing burden of cancer in Europe as more people are diagnosed each year, many of them having other diseases related to their age. Cancer could become more difficult to deal with due to the high volume of cases. In addition, there is currently insufficient focus on prevention and early detection strategies, which could be used to reduce this growing burden.
- Patients, their families, and all those who care for them not only need support during the difficult times of the treatment, but they need as much support after care as well. Cancer survivors often find it hard to go on with their lives as they face prejudice due to their medical history. For example, banks not giving them a mortgage to buy a new house, insurance companies turning them away or new employers refusing to hire them, all because of their past disease. Despite being completely healed, they are forced to live with a stigma.

That is why we need to remind everyone of what Europe is all about: Europe is about making sure each and every one of its people enjoys a good life and has access to the same chances. Europe is about making the world a better place.

### **III. Together, we can fight back: launching a European Master Plan to fight cancer**

In Europe, we already have everything it takes to achieve ambitious goals: brilliant minds, strong drive, resources, innovative spirit, and solid values that embrace diversity. This is the source of our greatest strength; what makes Europe unique. Our continent has historically been at the forefront of revolutionary discoveries. Now, we have to look ahead and take up our responsibility to face the great challenge of our time. We only need to renew our efforts once more and come together as the community we are to spread and consolidate the achievements of the past while seizing the opportunities of the future.

**We will overcome the research gap in Europe by harnessing the potential of Big Data.** Big data holds one key to future progress in cancer research. In prevention and early-detection, by analysing large number of patients' data, it would be possible to clearly identify signs of predisposition and risk factors. In diagnostics, as cancer is ultimately an individual disease, it

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<sup>4</sup> Euronews, "Cancer survival rates 'improving across Europe'": <https://www.euronews.com/2018/02/04/cancer-survival-rates-improving-across-europe->

<sup>5</sup> ClinicalTrials.gov: <https://clinicaltrials.gov/ct2/results/map?cond=Cancer&map=EU>

would be possible to find the precise treatment combination that works for a specific person and to improve the overall quality of therapy. In clinical trials, access to a larger quantity of information allows for much faster and effective results for each specific type of cancer.

As cancer is not just one disease but, for each type, many other subtypes exist, Europe must rely on the specialisation and expertise of each centre. That is why it is crucial for the European Union to harness the network potential. By establishing a **European Digital Cancer Centre**, it is possible to reach the scale and critical mass necessary to achieve breakthrough discoveries in cancer care. By facilitating the exchange of big data across Europe, we would speed up the transition from information to correlation and, eventually, to causalities, that would allow, for instance, much quicker identification of risk factors and targeted patient treatment. To achieve this, we should also strive to encourage high standards of electronic patient documentation across Europe, with formats that allow secure exchange of information. The Digital Centre would take the form of a decentralized cooperation structure database so that clinicians, basic researchers, health authorities, and patients' organizations can know which centre has specific information and can request access without the information ever leaving the originators' ownership.

**We will protect our patients' right to privacy.** Europe has a unique model of innovation: we put people at the centre. For us, it is not technology that shapes the people; it is the people that shape technology. Unlike China and the US, we put the right to privacy of our citizens' first and our common values are mirrored in our approach towards innovation. The European way strikes a balance between progress and protection. That is why Europe must also take advantage of currently available tools - such as cryptography and encryption - to ensure that patients remain the sole owners of their data. We must embrace the potential of innovation, while setting clear ethical and social standards through establishing an **Internet Think Tank** to translate our core values for the digital age.

**We will strive for quality cancer care in each European country.** The same level of quality cancer care should be shared across the Union. Therefore, we will encourage an agreement among European level organisations representing cancer institutions, healthcare professionals, patients and other stakeholders on a set of core standards and evidence-based indicators to measure the quality of all cancer services to set up a **European quality accreditation for cancer centres**.

**We will step up our prevention strategy to reduce cancer burden.** It has been estimated that 40% of cancers could be prevented entirely if current knowledge about risk factors was better translated into prevention strategies.<sup>6</sup> Therefore, to reduce the growing cancer burden, it is critical to increase our focus on stopping the disease from occurring at all. That is why we will outline a

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<sup>6</sup> A. Berns et al, "A mission-oriented approach to cancer in Europe: Boosting the social impact of innovative cancer research", *European Academy of Cancer Sciences and the Pontifical Academy of Sciences*, The Vatican, November 16-17, 2018.

coherent **European Cancer Prevention Strategy** building on previous EU-led and stakeholders initiatives. It will aim at encouraging the formation of international collaborative consortia between research centres in prevention across Europe, which are less common in prevention rather than in treatment.<sup>7</sup> Supporting the implementation of effective regulatory measures coupled with far-reaching public awareness initiatives on well-known risk factors such as smoke - especially among kids - UV exposure, alcohol, unhealthy diet, obesity and viral infection (HPV) and exposure to other environmental contaminants.

**We will improve chances of survival by promoting early detection.** Treatment is surely critical; nevertheless, the ability to identify the disease at the earliest stage possible allows for treatment of the tumour, before it becomes too advanced. Early detection increases the chances of survival and treatment is at a much lower cost compared to medical treatments for more advanced tumours. By combining early diagnosis and screening, we could reduce mortality by 20% in colon, breast and cervix cancer. Therefore, we want to design a coherent **European Strategy for Early Cancer Detection** by bringing together our best institutions and experts in Europe with the aim of ensuring a broader implementation of screening programmes and early diagnosis techniques across all EU Member States.

**We will give cancer research a new boost.** We want to set free all our continent's capacity that is why we intend to promote European Universities to empower our top talents alongside attracting the best researchers to Europe. In our Union, our diversity is our strength: we will support projects and initiatives across Europe that truly stimulate research advancements in prevention, detection, and treatment, as well as increase universities' networking.

We want to employ research and innovation purposefully, by bringing biomedicine and Big Data together and empowering the new generation of data scientists. To handle the huge volume of research data, we must invest in artificial intelligence that would be available to all researchers and can assist in quickly identifying the most pertinent research for a given case. In this way, research would spread much faster, it would not be limited only to the most well-funded centres, but also extend to experts throughout Europe and results would reach patients much earlier.

Our efforts must go towards bridging the gaps in the continuum of cancer basic and clinical research and care with supportive and palliative aspects. There have been huge successes in survival rates for some cancer types. For paediatrics, for example, 80% of all cases are cured, 83% of breast cancer sufferers survive<sup>8</sup>, as do over 85% of those with HPV throat cancer.<sup>9</sup> With some cancers so close to reaching 100% survival rates and the possibility of reducing the increasing incidences of cancer, if we are even more ambitious with focused and joint efforts, they could be eradicated completely.

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<sup>7</sup> D. Forman et al, "Time for a European initiative for research to prevent cancer: A manifesto for Cancer Prevention Europe (CPE)", *Journal of Cancer Policy*, Volume 17, pp. 15-23, 2018.

<sup>8</sup> Euronews, *op. cit.*

<sup>9</sup> Mountsinai, Head and Neck Institute, Cancer:

<https://www.mountsinai.org/locations/head-neck-institute/cancer/oral/hpv-faqs>

**We will bring our professionals together to leave no one behind in the fight against cancer.** Cancer knows no boundaries and so should our efforts to fight it. Europe has to keep promoting collaboration initiatives *among* specialized networks of excellence and *across* networks, such as promoting and consolidating cooperation between centres as effective collaborative units, made up of a limited number of partners for their interaction to remain manageable and flexible.

All centres and hospitals in Europe, all health care providers in their speciality, must be able to reach the highest standard of care and benefit from the scale of European-wide action in their research, for instance by pooling knowledge for clinical trials on a particular cancer sub-type. By launching a **European Partnering Programme**, we can help smaller centres and hospitals to engage with the whole research community and help all centres share data and knowledge to fill any gaps they may have.

There should be no differences in cancer care across European regions: patients in remote areas and small villages have to be able to benefit from the same quality care of patients in central areas and Europe must strive to achieve the same survival rates for good prognosis patients in every European country. That is why Europe must harness the revolutionary potential of technology to break down distance barriers across Europe by creating a **European Platform for Telemedicine and e-health**.

**We will let Europe take the lead with the most advanced infrastructure.** If Europe wants to succeed in the fight against cancer while protecting our patients' data, we cannot keep relying on technology coming from China and the US that does not have to meet our security standards. Every region must have access to supercomputing and the latest digital infrastructure. Through an **Investment Plan 4.0**, Europe must take the lead in supercomputers and cloud technology to take ownership of its own future.

**We will support initiatives that help patients *during and after* care.** Reassuring patients going through the treatment is of utmost importance for their well-being. The focus has to be on psychological and emotional support along with supportive care measures to decrease the side effects of treatments. There should be an emphasis on improving information available about treatment and the care process, and on taking advantage of digital instruments such as apps for personal care that allow doctors to monitor patients staying in their homes in between visits and when a trip to the hospital is not always necessary. Their caregivers deserve much more assistance in their private lives. We should make it easier for family members to care for their loved ones and still to be able to manage their daily life. Finally, it is unacceptable that when patients manage to heal, they cannot move on with their lives because of their medical history. That is why, the right to be forgotten in Member States' legislations should be extended to employers, insurance companies and banks, especially for young people, to prevent knock on effect of cancer and to make sure survivors are not discriminated in having a good quality of life after the disease.

Most of us have a dear friend or family member who has battled cancer. It is a very intimate matter for a family and, yet, it concerns us all. We found a vaccination against smallpox. We found penicillin against pneumonia. Together we have already eradicated these devastating diseases. Why should we not also manage to eradicate cancer? Let's make it a common project. Europe has the minds, the capacity and the energy: it has only to unleash its potential to take the lead in this fight. Together we, Europeans, can join our forces and strive to find a cure. Let us launch a European master plan to cure cancer.

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