



Working Against Cancer: Giving Professionals the Right Tools for the Job



Workforce Network



The Workforce Network is one of the European Cancer Organisation's Focused Topic Networks, established as part of our Strategy for 2020–2023. The Workforce Network was launched in June 2020.

More information is available on our [website](#).

If you would like to find out more about the Workforce Network, please contact us at: info@europeancancer.org

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^a Community 365 is a group of charity, philanthropy and industry contributors to the Focused Topic Networks of the European Cancer Organisation. Community 365 provide ideas, guidance, practical support and resources for our work in convening stakeholders and building consensus in the European cancer community. Community 365 contributors do not have a decision-making role in our policy work. Rather, policies of the European Cancer Organisation, such as those represented in this document, are agreed by our Board after consultation with our Member Societies and Patient Advisory Committee, via our Policy Pathway process. More information here: europeancancer.org/community-365

Introduction

“You have a right to receive care from a specialised multidisciplinary team.”

***European Code of Cancer Practice,
Right Number 4***

Multidisciplinarity and multi-professionalism are the foundation upon which a successful fight against cancer can be built. The complexity of cancer and its management means modern cancer care involves a very wide range of modalities across the cancer continuum, for the successful delivery of prevention, diagnosis, treatment, care, follow-up, and survivorship care. These modalities include, but are not restricted to, radiology, pathology, surgical oncology, radiation oncology, interventional oncology, medical oncology, nuclear medicine, specialist cancer nursing, oncology pharmacy, primary care, palliative care, supportive care and psycho-oncology. Depending on the cancer type and on the patient, additional, organ- and age-specific, disciplines are also involved in cancer multidisciplinary management, such as mastology, gastroenterology, urology, pulmonology, dermatology, pancreatology, nephrology, haematology, hepatology, gynaecological oncology, neurology, geriatric oncology and paediatric oncology. All these elements and professions are crucial to provide quality cancer care to patients, and for the achievement of optimal patient outcomes across the patient journey.¹

Europe’s cancer professionals are the engines that drive the performance of healthcare systems to combat cancer and achieve better outcomes. There can be no cancer prevention, diagnosis, treatment, care, follow-up and survivorship care without a cancer workforce. Indeed, as expressed by the European Code of Cancer Practice, every cancer patient should expect, as a right, to receive care from a specialised multidisciplinary team (Right Number 4).² It is to the achievement of this Right within and across Europe that our Workforce Network directs this paper.

To ensure every part of Europe benefits from high quality cancer control, delivered by multidisciplinary and multiprofessional cancer teams, focused effort is required to:

- Overcome the difficulties caused by workforce shortages;
- Reduce unnecessary barriers to professional mobility;
- Improve occupational conditions so that the safety and well-being of healthcare professionals are protected; and
- Enhance education and development opportunities for healthcare professionals, that are now even more achievable in the digital age.

This paper sets out clear, pragmatic and achievable recommendations, that are immediately available, and that will achieve improvement across all four of these challenge areas.

We encourage the reader to share the proposals and suggestions of this paper with all who may have influence upon their adoption, be that at local, national, European or international level, as well as with professional organisations, educational institutions and government agencies.

Inattention to the calls of cancer professionals otherwise risks setting back our collective fight against cancer and denying patients the high-quality care every person diagnosed with cancer has a right to receive.

Europe's Beating Cancer Plan – A Start, but Not a Finish, on Cancer Workforce Needs

The European Commission's holistic approach to combating cancer within the recently published Europe's Beating Cancer Plan is laudable. This applies insofar as:

- **There is a clear endorsing statement that “High-quality cancer care depends on a high-quality workforce”.** There is also an expressed understanding in the Plan of the need to “*build a stronger multidisciplinary cancer workforce*”;
- **A target is set that 90% of eligible patients should gain access to recognised national Comprehensive Cancer Centres by 2030.** A core emphasis of comprehensive cancer care is the assurance of an interdisciplinary and multiprofessional approach to cancer management^{b;3,4}
- **Certain cancer workforce education needs are identified, such as in respect to digital skills, artificial intelligence (AI), genomics, and personalised medicine.** Some measures to help address workforce education needs are proposed in the Plan, notably the new ‘**Inter-specialty cancer training programme**’;
- **Many different Directorate Generals (DGs) are involved in the Plan, including those for Health and Food Safety (DG SANTE) and Research and Innovation (DG RTD), but also those for Employment, Social Affairs and Inclusion (DG EMPL) and for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW).** The two latter DGs have portfolios especially relevant to jobs, skills and mobility, and therefore must be understood to have a central role in assisting the Plan's implementation.

The announcement of an ‘**Inter-specialty cancer training programme**’ is highly welcomed, and our Workforce Network looks forward to working with the Commission to ensure it encompasses as many of the core professions involved in cancer care as possible.

The Knowledge Centre on Cancer should aim to build on the great platform of experience and recommendations for cancer care developed by Europe's cancer professional societies, including professional, sectoral and clinical guidelines.

To meet purpose, it will be of critical importance that **the Cancer Inequalities Registry** provides information on the levels of access patients across Europe are achieving to the core modalities of cancer prevention, treatment, care, follow-up and survivorship care. This will help to highlight where workforce shortages are most acute and therefore enable the most targeted and effective policy responses to be launched.

We welcome the commitment to **further update the Carcinogens and Mutagens Directive** and recommend that specific attention is given to tackling exposure of healthcare professionals to cytotoxic products in this context.

However, the Workforce Network of the European Cancer Organisation emphasises the importance of Europe's Beating Cancer Plan not being the final word on EU initiatives to support cancer workforce needs in the years ahead. As outlined in this paper, key additional opportunities for immediate action include:

- The creation of a separate **DG EMPL** led initiative to address pan-European skills shortage in the cancer sector, such as **a cancer ‘pact for skills’**;
- A re-evaluation by **DG GROW** of how the Professional Qualification Directive applies to specialties in cancer, with fresh efforts made to **reduce the hurdles for pan-European qualification recognition and mobility**;
- The establishment of **a ResceEU style mechanism to help alleviate workforce shortage**;
- The conduct of **a high-level EU study on pay, working conditions and career structure for healthcare professionals and workers in the cancer sector.**

^b See, for example, the [Standards of the Organisation of European Cancer Insitutes](#) (OECI)

Summary of Recommendations

Don't leave cancer teams short and incomplete: Address workforce shortages

- Populate the promised Cancer Inequalities Registry with a clear section dedicated to measuring patient access to cancer professions across Europe
- Initiate a cancer-related skills partnership under the EU 'Pact for Skills' strategy
- Establish a RescEU style mechanism to help alleviate workforce shortage
- Make workforce capacity mapping and response part of the mandate of the new Health Emergency Response Authority (HERA)
- Carry out a high-level EU study on pay, working conditions and career structure for healthcare professionals and workers in the cancer sector

Embrace and encourage harmonisation and mobility of cancer specialties

- Proactively deploy the Professional Qualifications Directive to support specialisms in cancer control in harmonising education and training requirements and increasing the mobility of skills and experience in cancer control across Europe
- Conduct a study and report on the use of the Professional Qualifications Directive to improve access across Europe to high quality multidisciplinary cancer control
- Publish user-friendly EU guidance to healthcare professional organisations on the step-by-step process to follow in order to achieve automatic qualification recognition under the Professional Qualifications Directive

Keep Europe's cancer professionals safe and protect their well-being

- Address exposure of healthcare workers to cytotoxic products through coverage under the Carcinogens and Mutagens Directive
- Mandate EU-OSHA to provide dedicated attention to the occupational safety and health concerns of the cancer workforce as a part of the EU's collective combat of cancer.
- Continue to support research needs in the field of radiation protection and other areas of occupational health and safety risk
- Publish official EU guidance to health systems on ensuring the welfare and the well-being of healthcare professionals
- Recognise and address the issue of errors and adverse events in cancer and healthcare, as well as their consequences for involved professionals
- Use EU funding tools to promote safety culture and practices

Accelerate the opening of education, training and development opportunities

- Ensure that the new 'Inter-specialty cancer training programme' of Europe's Beating Cancer Plan provides attention to all professions and specialties involved in cancer control
- Promote the update of professional curricula, qualifications and requirements for continuous education to include digital skills, and other cross-professional skills needs
- Revise the EU Professional Qualifications Directive to better support all European healthcare professionals in achieving continuous professional development
- Promote the benefits of accrediting oncology education and training

1. Don't Leave Cancer Teams Short and Incomplete: Address Workforce Shortages

Oncology pharmacists redeployed to address urgent needs related to hospitalised COVID-19 patients. Cancer nurses redeployed to assist with surging admissions in intensive care units. Personal workloads increasing by several multiples as demands on teams within the hospital exceeded what was available. Best practices in service provision compromised as lack of hospital staff created close to intolerable pressures. Staff and patient safety thereby placed at risk.

These are just some of the realities of the impacts on cancer control reported to us by professionals as a result of the workforce shortages created by COVID-19 during 2020. A twin process of surging patient case numbers and, often, staff reduction from COVID-19 infection and quarantine requirements took place.^{5,6}

And yet... Workforce shortages were never uncommon in cancer control before COVID-19. A pre-existing problem has simply been thrown into sharper relief and the public spotlight. A problem that our Workforce Network projects will get worse in the years and decades to come with dedicated attention, as the cancer workforce itself ages,^c and as cancer incidence increases.⁷

Examples of such needs reported to our Network include shortages experienced in pathology, cancer nursing, radiology, medical oncology, oncology pharmacy, psychological support services, dermatology, and primary care.

Already in 2012, the European Commission estimated that Europe could be short of 230,000 doctors and 590 000 nurses by 2020, resulting in 14% of corresponding care needs not being covered.⁸ This, in addition, is associated to large inequalities between countries, with some European countries having 5 times fewer doctors, and 9 times fewer nurses, than others.⁹ Similarly, also as a result from insufficient workforce supply, medical oncologists'

workload in Eastern European countries was recently demonstrated to be 29% higher than in Western Europe.¹⁰

As another example, the density of pathologists in Europe in relation to the general population was found to be, on average, 21% lower than in the United States, with this ratio mounting up to 60% in some EU Member States.¹¹ In another study conducted in the United Kingdom, it was also shown that, due to radiologist shortages, 97% of all radiology departments had been unable to meet their diagnostic reporting requirements within their radiology staff's contracted hours,¹² while a mean vacancy rate of 8.1% for all pharmacy staff in hospital trusts was also found.¹³ In France, a 10% decrease in the number of dermatologists has been evidenced over the last decade, resulting in an average 61-day waiting time for patients to get a dermatology appointment, almost two times more than in the United States.¹⁴

Overdue attention is finally being paid to the professional supply problem that exists in cancer control, and other parts of healthcare: Not enough experienced, appropriately educated and trained individuals to fulfil the many needed roles.

Our Network makes the following recommendations in order to achieve equal access of cancer patients to complete multidisciplinary and multiprofessional cancer teams:

- **Populate the promised Cancer Inequalities Registry with a clear section dedicated to measuring patient access to cancer professions across Europe**

Such an exercise in measurement should be inclusive of all the key professions involved in cancer control, and as described in the Essential Requirements for Quality Cancer Care.¹⁵ This includes, but is not limited to, radiology, pathology,

^c As a matter of example, the [World Health Organization Regional Office for Europe \(WHO Europe\) estimates](#) that nearly one out of three European physicians is now more than 55 years old, which is an increase of 6% over the past 7 years, and calls for an increased number of medical graduates in order to guarantee at least the same availability of physicians.

surgical oncology, radiation oncology, interventional oncology, medical oncology, nuclear medicine, specialist cancer nursing, oncology pharmacy, primary care, palliative care, supportive care and psycho-oncology, as well as organ- and age-specific disciplines, such as mastology, gastroenterology, urology, pulmonology, dermatology, pancreatology, nephrology,

haematology, hepatology, gynaecological oncology, neurology, geriatric oncology and paediatric oncology. Importantly, such a measuring exercise could build upon relevant initiatives already developed by expert stakeholder organisations, such as the European Oncology Nursing Society (EONS) Cancer Nursing Index.¹⁶

The EONS Cancer Nursing Index

The EONS Cancer Nursing Index^e provides a country-by-country profile of the status of cancer nursing across Europe. A scoring system allows an easy-to-follow-and-use presentation to be made of where national systems are presently in terms of such matters as: Education and Career Development; Patient and Occupation Safety; Professional Recognition; and Workforce Levels.

It is an illustrative example of how measurement can drive attention to the areas of policy need and therefore help achieve reductions in inequalities in cancer care. It is a pertinent case study for the forthcoming Cancer Inequalities Registry to be developed under Europe's Beating Cancer Plan.

Measuring and reporting on patient access to multidisciplinary cancer care in this way will provide new levels of accountability, information and enhance our ability to target improvement efforts. Indeed, a Cancer Inequalities Registry that does not encompass measurement of access to the multidisciplinary professional element of cancer care would be blind to one of the most fundamental components of cancer care and control, as expressed and acknowledged within Europe's Beating Cancer Plan.^d

Results on improving patients' access to multidisciplinary cancer care should form part of an annual reporting exercise on the progress of Europe's Beating Cancer Plan to the European Parliament and the public more generally.

- **Initiate a cancer-related skills partnership under the EU 'Pact for Skills' strategy**

The EU's new 'Pact for Skills'¹⁷, a major upskilling and reskilling initiative of the European Commission, is supported by our Network in respect to its intentions to help promote targeted investment in skills in identified areas of workforce need.

We identify a strong potential role for a specific European skills partnership to be established under the 'Pact for Skills', dedicated to help overcome skills and workforce shortage needs in the cancer sector.

- **Establish a RescEU style mechanism to help alleviate workforce shortage**

This suggestion has been expressed by the European Cancer Organisation's Special Network on the impact of COVID-19 on Cancer¹⁸ in its recent paper the *7-Point Plan to Address the Urgency and Build Back Better*.¹⁹ It is further supported by the European Cancer Organisation's Workforce Network.

RescEU, launched as a new European reserve of resources within the EU Civil Protection Mechanism, notably includes a stockpile of medical equipment.²⁰ This allowed the European Commission to play an important coordinating role in addressing product shortages during the first phase of the COVID-19 pandemic. In addition, the problem of medicines shortages was recognised in the recent European Commission's Pharmaceutical Strategy, which proposed several measures to address it, including a stronger coordinating role of the European Medicines Agency (EMA).²¹

^d "High-quality cancer care depends on a high-quality workforce." [Europe's Beating Cancer Plan, p.17.](#)

^e [The EONS Cancer Nursing Index](#)

The cancer workforce is, of course, in no way less important than medical products or medicines in ensuring the treatment and care of patients.

In view of the pandemic experience during 2020, and of the longstanding issue of shortages in certain cancer professions, a similar adapted mechanism should therefore be considered for pan-European workforce redistribution, in both the short and the long term.

This might include a register of practising healthcare professionals willing to work in other countries, in situations where that country faces acute workforce shortage. Such a mechanism could also aim at providing much-needed assistance to healthcare professionals trying to navigate through national medical and regulatory landscapes. A further suggestion has also been made of creating a non-commercial European employment agency for healthcare professionals in the cancer sector.

- **Make workforce capacity mapping and response part of the mandate of the new Health Emergency Response Authority (HERA)**

The Workforce Network applauds the European Commission's goal of creating a new Health Emergency Response Authority (HERA) to ensure better EU preparedness for future health emergencies.²² Having in place the workforce, with the necessary training, skills and experience, is a central element of being prepared for a health emergency. Central to HERA's work should be an involvement in mapping, reporting and advising about health workforce capacity across Europe. There is an army of medical, scientific and healthcare professional societies at the international and European level ready to give assistance to HERA with such work.

- **Carry out a high-level EU study on pay, working conditions and career structure for healthcare professionals and workers in the cancer sector**

Ultimately, the matter of pay, working conditions and career structure must be addressed in order to resolve workforce shortages in the longer term, and to combat the 'brain drain' of talented specialists educated and trained in Central Eastern European

countries, leaving to seek better working conditions and higher salaries in Western European countries. As the European Commissioner for Jobs and Social Rights, Nicolas Schmit, has himself stated: *"The first dignity of work is to pay people a fair wage"*.²³

Our Workforce Network recognises it is beyond the immediate legal competence of bodies such as the European Commission to make significant intervention into Member State approaches to healthcare professional remuneration. However, it is wholly within remit, and a much required need, to map the current state-of-play of pay and conditions across Europe in order to understand the roots and solutions to identified shortages in the cancer workforce.

Furthermore, continued support should also be considered for horizon scanning exercises for health workforce planning and future needs for skills and competences in the health sector. This should notably take inspiration from already existing relevant initiatives, such as the Joint Action on Health Workforce Planning and Forecasting,²⁴ and the Support for the health workforce planning and forecasting expert network.²⁵

Commenting on the Report's recommendations on addressing workforce shortages, Prof Andreas Charalambous, Network Co-Chair and President-Elect of the European Cancer Organisation, said:

"COVID-19 has created a political wakeup call on many matters, including creating political action to address longstanding problems of medicines and product shortages in Europe. Now we need similar serious measures to address well known shortages in our healthcare workforce, including cancer care."

Whether in respect to cancer nurses, or pathology, or other professions critical to the provision of high quality cancer care, if we don't seriously tackle the workforce shortage issues, our ability to achieve all the aspirations of Europe's Beating Cancer Plan will be compromised. Our report today outlines available remedies ready to be taken up immediately."

2. Embrace and Encourage Harmonisation and Mobility of Cancer Specialties

The Growth of Cancer Specialties and Professions

The science, technology and knowledge employed to fight cancer has increased significantly over the last 50 years. This has produced highly beneficial impacts for outcomes and survivorship of cancer patients. In keeping with this, so too has the range of specialties and sub-specialties involved in cancer control. Together, thanks to their specific skills and practice, they work in combination and close cooperation to ensure that the needs of cancer prevention, diagnosis, treatment, care, follow-up and survivorship care are met by well trained and educated professionals, competent to perform their roles, protect patients' safety and quality of life, and improve their outcomes. The growth of cancer specialisms and specialties, as well as the access of patients to them, are an integral part of the improvement of cancer control.

This professional development activity has happened relatively organically, with professional and scientific societies embracing changes in practice and developing frameworks such as new curricula, qualifications and educational resources, generally without high levels of Government or EU support.

The Importance of Recognising and Harmonising Cancer Specialties and Professions

Unguided development of cancer specialties does come with a risk. That each country in Europe unintentionally puts in place its own individual response to emerging scientific and practice fields, with a net result of dozens of different professional requirements and training programmes. Such an eventuality hampers professional mobility and exchange and creates barriers to professional and scientific flourishing.^{26,27}

For this reason, European-level professional associations dedicate enormous efforts to

achieving consistency in approach to education and training, all with an aim of instituting a European expression and understanding of their profession.

Such efforts to achieve harmonisation of different cancer specialties yields vital benefits. These include raising practice standards across the EU, better meeting patient safety needs, and helping to combat inequalities in the access of cancer patients to multidisciplinary high quality cancer control, by preventing specialty care from being present and developed in some parts of Europe but not others.

Where a qualification can not only achieve a harmonisation, but go on to achieve an EU level qualification recognition, doors are opened for automatic recognition of a qualification across national borders. This significant boost to the mobility of a specialism stimulates knowledge exchange between countries and assists in building healthcare system resilience by helping talent and skill to be distributed to areas affected by shortages of that profession.

An Inadequate Legislative Framework at EU Level

Yet, too often, the seldom simple, and often lengthy, work that professional organisations conduct to achieve harmonisation of qualification requirements is sadly not met by a welcoming and easy-to-use EU Professional Qualifications Directive.

It is a common experience of many professional societies in the cancer community that this potentially change-making piece of EU legislation for professional mobility is impeded by cumbersome requirements, opaque mechanisms for its use, and a blocking sense of its core purpose.

Often, an impression is gained by those seeking to make use of the Professional Qualifications Directive to create a harmonised training and education programme, that harmonisation and recognition of a qualification should only be sought AFTER demonstrable problems in mobility are proven, instead of encouraging such legal recognition to take place BEFORE such problems arise. Little to no acknowledgement is provided in the regulatory approach to the great public benefits achieved by harmonisation of health profession's training and development requirements across Europe. Too often, European-level professional organisations become dispirited by the sense of high barriers being put in place to prevent effective use of the Professional Qualifications Directive for the purposes of improved qualification recognition.

How to Achieve Progress

A change in approach is required, as recently supported by a resolution of the European Cancer Summit 2020:

*"A fundamental tool for the delivery of EU ambitions on improving cancer care should be the Professional Qualifications Directive. The Directive should be proactively deployed to support specialisms in cancer care in harmonising education and training requirements and increasing the mobility of vital skills and experience in cancer care across Europe."*²⁸

*Resolution of the European Cancer Summit 2020
on Workforce*

Our Network calls on DG GROW to take its role in achieving the aspirations and goals of Europe's Beating Cancer Plan seriously.

A major step in doing so would be to commission a study and report on the use of the Professional Qualifications Directive to improve access across Europe to high quality multidisciplinary cancer control. The study should take close account of stakeholders' knowledge and understanding of the Professional Qualifications Directive. Arising recommendations should make suggestion on how the Directive can be applied in a manner more facilitative to the improved labour mobility of cancer professionals in Europe.

An inclusive approach should also be taken, recognising that the range of professional development activities conducted by European professional associations most often extends well beyond EU borders. **Further agreements between the EU and third countries on professional recognition in the health field should therefore be closely considered and encouraged.**

Furthermore, as an even more immediate action, **our Network recommends that DG GROW publish and promote official user-friendly public guidance material to European level healthcare professional organisations on the step-by-step process to follow in order to achieve automatic qualification recognition under the Professional Qualifications Directive.** This should include making available official facilitation services to help more professions achieve such recognition, such as dedicated outreach officers.

Commenting on the Report's recommendations on professional mobility, Prof Geerard Beets, Network Co-Chair and Professor of Surgery at Maastricht University, said:

"When a particular profession completes all the hurdles and achieves an EU-level cross border automatic recognition of a qualification the societal benefits are manifest. Restrictions to movement are lifted. Obstacles to mobility are overcome.

This is all the more the case in healthcare and cancer care, as experts can bring their specialised skills and contribution to where they can make the

most difference. Knowledge flow across borders can also accelerate.

But why do we put so many barriers in the way to achieving EU level automatic recognition of a qualification? It is time for a serious paradigm shift in how we think about this from a regulatory point of view. Let's encourage harmonisation of qualifications across borders before divergence becomes a problem, not after.

As we take forward a European plan against Cancer, let's also free up our cancer workforce to better share their expertise across Europe."

3. Keep Europe's Cancer Professionals Safe and Protect Their Wellbeing

All individuals contributing to the delivery of cancer control have a right to healthy and safe working conditions. To external readers such a statement may seem inherently obvious. Yet the realities of daily experience in delivering cancer control make it highly pertinent and contemporary. A number of particular safety and workplace concerns from among the community represented within the Workforce Network are described in the sections below.

Ensure Safety of Cancer Professionals from Chemical, Radiation and Other Risks

Protecting healthcare professionals from cytotoxic and hazardous chemical exposure

Cytotoxic drugs (also referred to as cytostatic or antineoplastic drugs) are a group of medicines designed to destroy cells that grow in a rapid and uncontrolled manner, preventing their replication or growth. Worldwide, these medicines are increasingly being used in a variety of healthcare settings, and prominently in the treatment of cancer, where they represent the foundation of chemotherapy.

The potential therapeutic benefits of cytotoxic drugs outweigh the risks of side effects for ill patients, who receive concentrated doses of a limited number of cytotoxic drugs for a defined period of time. However, healthcare workers, who may be exposed to small doses of a broad range of cytotoxic drugs over decades, are at risk of acute and severe health effects if the appropriate safety measures are not consistently applied. The health hazard for medical personnel handling these drugs is a major concern, as they are not only classified as potentially carcinogenic, but also mutagenic and toxic to

reproduction. In particular, nurses, pharmacists, pharmacy technicians and cleaners have the highest risk of being potentially exposed.

Known detrimental effects of exposure to cytotoxic drugs for healthcare professionals include:

- Acute effects, such as dizziness, nausea, headache, dermatitis and menstrual problems; and,
- Chronic effects, such as liver, kidney, bone marrow, lung and heart damage, infertility, foetal abnormalities, hearing impairment and cancer.

While these risks posed by cytotoxic drugs, during activities such as their preparation and administration to treat patients with cancer, have been recognised by the services and agencies of the European Commission, as well as through national guidelines in Member States, much remains to be done to properly address them. Indeed, as opposed to other occupational hazards currently addressed by legislation at the European and national level, there still currently exists no harmonised approach to the prevention of this chemical risk in the healthcare sector in European legislation.

Against this background, the Workforce Network welcomes the inclusion within Europe's Beating Cancer Plan of a commitment to consider further updates of the EU Carcinogens and Mutagens Directive, as well as the Plan's commitment to reduce harmful occupational exposure to chemicals through the new EU Strategic Framework on Health and Safety at Work.

We urge:

- **Exposure of healthcare workers to cytotoxic products now be covered under the Carcinogens and Mutagens Directive** and via the 2021–27 EU Strategic Framework on Health and Safety at Work;
- **Stronger EU legislation specifically protects healthcare workers from the reprotoxic effects of these agents**, with a particular attention to pregnant and breast-feeding workers, preventing any harm to men and women of childbearing age as well as to their offspring; and,
- **The EU promotes mandatory education before handling cytotoxic drugs, routine use of the Yellow Hand hazard symbol** to clearly label cytotoxic drugs,²⁹ **systematic environmental monitoring in clinical setting** to identify risk areas for occupational exposure, and **access to adequate personal protective equipment for all healthcare workers** that could be exposed to cytotoxic drugs.

Furthermore, the **European Agency for Safety and Health at Work (EU-OSHA) should take a leading role in promoting uptake of such relevant best practices** that minimise the exposure of cancer workers to cytotoxic drugs and other hazardous chemicals, notably through the use of recognised quality standards tools such as QuapoS.³⁰

Finally, support should be considered to research programmes into safer alternatives to hazardous chemicals used in cancer control, such as through EU research funding mechanisms.

In addition to cytotoxic drugs, another source of occupational chemical risk for the cancer workforce reported to our Network is entailed by exposure of pathologists to formaldehyde. This chemical, widely used as a fixative and preservative of tissue samples in pathology laboratories, has adverse effects on health both acutely, such as severe allergic reactions of the skin, eyes, and respiratory tract, and over the long term, such as cancer, as recognised by the International Agency for Research on Cancer.^{31,32}

Maintaining Europe's lead in ionising radiation protection

Ionising radiation is defined in European regulations as *“energy transferred in the form of particles or electromagnetic waves of 100 nanometer or less [...] capable of producing ions directly or indirectly”*.³³ Exposure to ionising radiation is a normal condition for all life on earth. Humans are indeed constantly subject to a background of cosmic radiation, exposure from primordial radioactivity in the

ground, and even internal radiation within human bodies, which contain some unavoidable amount of radioactivity.

However, several common medical procedures, including certain diagnostic radiology procedures (radiography such as mammography, computed tomography, fluoroscopy), radiation oncology and nuclear medicine, involve the use of ionising radiation beyond the level of natural background. These procedures are instrumental to cancer control, both for cancer screening, detection and diagnosis via imaging, and for cancer treatment and management via radiation and targeted image-guided minimally-invasive therapeutic procedures (also known as interventional oncology). As such, they provide invaluable health benefits to cancer patients and have played a crucial role in the improvements of cancer outcomes observed in the last decades.

Certain of these procedures can entail exposure of healthcare professionals involved in their

delivery to ionising radiation. Radiation emitted during fluoroscopic procedures is an example. Fluoroscopic imaging uses x-rays to obtain dynamic and cinematic functional imaging. Radiation from diagnostic imaging modalities, such as computed tomography, mammography, and nuclear imaging, are minor contributors to the cumulative dose exposures of healthcare personnel.

When interacting with human cells, the ionising power of such radiation has the potential to lead to chemical changes, including DNA damage and mutations, which could in turn cause degenerative cellular changes, including cancer. However, for low doses the relationship between cancer induction and diagnostic procedures has not been shown. Technology, training and procedures have developed enormously over the last century and help to reduce radiation exposure to medical staff and patients to a minimum.

Overall, our Network considers that the protection of healthcare professionals involved in the delivery of procedures using ionising radiation from the

potential harmful effects of such radiation is well addressed, as compared to other overall occupational health and safety risks faced by cancer workers. Strict regulations and protocols, and continuous education, awareness and implementation of them, are in place across the EU to provide protection and minimise healthcare professionals' exposure to ionising radiation.

This has, to a great degree, been achieved through the cooperation and scientific activities of many professional organisations in the relevant fields, working together in the production and promotion of standards and guidelines, as well as in the promotion of research. Collaborative initiatives such as EuroSafe Imaging and the European Alliance for Medical Radiation Protection Research (EURAMED) are powerful examples of cooperation towards a shared goal of ensuring continuous improvement in safety culture. EuroSafe Imaging and EURAMED bring together all concerned professions to increase research efforts in radiation protection and to disseminate findings.

To maintain and enhance radiation protection safety culture, European research efforts in radiation protection should remain an important component of the EU Horizon Europe research programme and the relevant findings and recommendations promoted across national health systems.

Further to the above, other wider occupational safety and health issues that have been reported to the Workforce Network include risks entailed by sharp injuries and chemical fumes. These too, should receive attention under relevant EU occupational health and safety initiatives.

Promote Wellbeing of Cancer Professionals

Ending the practice of placing impossible workloads on the shoulders of cancer professionals

Stress and impossible workloads are a clear and present risk to the safety and quality of care provided to cancer patients, and to the well-being

of professionals. Inadequate preparation or administration of medicines, or inaccurate delivery of treatments such as surgery or radiation therapy, by stressed and over-loaded personnel, can pose the potential of significant patient safety risk.^{34,35} Further to their consequences on safety, persistent high levels of work-related stress also extensively affect cancer care providers' well-being, leading to psychological distress, compassion fatigue, exhaustion and burnout.

Healthcare professionals are human and have limits. We cannot, collectively, continue to refuse to face their daily reality. It is time to end the practice of placing impossible workloads on the shoulders of cancer professionals.

As a part of the EU Strategic Framework on Health & Safety at Work 2021–2027, and Europe’s Beating Cancer Plan, our Network recommends that:^f

- Official EU guidance be published to health systems on how to incorporate best practices to ensure the welfare and the wellbeing of healthcare professionals, including those working in cancer care
- This guidance also consider promoting the addition of psychologists to healthcare teams working in the frontline and the establishment of ‘peer support systems’³⁶
- This guidance include tangible advice and practical case studies, such as measures that can reduce healthcare professional time lost to unnecessary bureaucratic workload e.g. through digitisation and better system interoperability in respect to record-keeping

Digitisation and Better Health Coordination as Means of Enabling Smarter Working

It is noteworthy that administrative and non-healthcare activities are significant contributors to such excessive workloads for healthcare professionals. It has been estimated, for instance, that up to 40% of nursing time is spent on such tasks as manual documentation of processes across the medication pathway.^{37,38}

Testimony from a healthcare professional:

“One element of an increasing administrative burden for healthcare professionals working in cancer is the increasing range of requirements for ‘transparency’, ‘practice parameters’ and ‘quality indicators’, by governments, hospitals, patient organisations, health insurance companies. All these requirements are obviously with very good intentions in order to ensure access of patients to high-quality cancer control. However, their poor coordination is creating a lot of work on the ground. Better coordination of these quality frameworks is needed, as well as a higher involvement of healthcare professionals themselves. This is critical to ensure that these frameworks are not perceived as ‘distrust’ and do not stimulate risk-averse behaviours, which could cause patients with high comorbidity and patients requiring complex treatment strategies to not receive the care they need.”

In order to relieve burden on healthcare professionals, all health system managers should be constantly vigilant for methods and modes by which time spent conducting common workplace tasks, such as record keeping and entry, could be reduced via more effective use of digital aids.

For example, our Workforce Network identifies abundant opportunities, as yet unrealised across Europe, to achieve more progress in respect to e-prescription and e-administration systems.

At the EU level, we encourage DG CONNECT and DG SANTE, in the context of the EU’s Digital Agenda and health policy ambitions (e.g. Europe’s Beating Cancer Plan), to set common goals for digitisation of care across Europe.

^f This recommendation builds suggestions also made by the European Cancer Organisation’s Special Network on the impact of COVID-19 on cancer in their November 2020 report: [“The 7-Point Plan to Address the Urgency and Build Back Better”](#).

'To Err is Human': Preventing errors and adverse events from occurring and supporting professionals when they do

Individual mistakes and technological error occur in every walk of life, and in all occupational fields. However, in the cancer workplace environment, such errors can have devastating or even fatal impact for patients, and also healthcare professionals. As of now, the European Union has a greatly underplayed role in helping to reduce the possibilities for error, and in assisting health systems achieve a caring and understanding environment for professionals when they do.

Studies suggest that the great majority of healthcare professionals have been involved, at some time of their occupation, in errors or adverse events. Unlike many other occupational fields, the consequences of such events can be lethal. This is especially the case in cancer care, where medicines and other modes of treatment can pose special risks. Too often, if the supportive environment is not well calibrated, the sense of responsibility when an error occurs may become unduly individualised by healthcare professionals, leading to high degrees of stress and trauma, with long-term consequences for the well-being of the professional. This "second victim" phenomenon for healthcare professionals involved in adverse incidents and errors is becoming increasingly

recognised and documented. Alarming cases of its impact, including cases of suicide,³⁹ are achieving a greater level of public consciousness.

All healthcare systems in Europe should be undertaking work to assure an environment in which healthcare professionals, including those working in cancer, are:

- Educated appropriately to have a knowledge and understanding that will enable them to recognise common potential sources of error and risk;
- Emboldened to proactively address such potential sources of error and risk, including when co-workers are involved;
- Supported in making use of technology and tools that protect patient safety;
- Encouraged to report errors and near-misses when they do occur for the purposes of achieving a continuously improving safety culture and record; and,
- Supported when errors do occur, including being proactively provided with access to psychological support.

Toolkit procedures and approaches exist to achieve such a patient safety culture. Emphasis is required to see it achieved universally.

The Workforce Network therefore calls the European Union and its Member States to recognise and address the issue of errors and adverse events in cancer, as well as their consequences for involved professionals.

An EU agenda on patient safety should be developed, involving all relevant services of the European Commission, including DG SANTE (health systems), DG EMPL (occupational health and safety), DG GROW (patient safety inclusion with recognised healthcare professional curricula), DG Connect and DG Research.

Such an EU patient safety agenda should encompass guidance and recommendations to Member States on the **establishment of strong patient safety cultures**, which encourage reporting of errors and adverse events, the provision of **adequate digital systems that can help prevent such incidents**, and the **support to be provided to healthcare professionals when errors do occur**.

In the discussions with our Network in the development of this paper, other workplace environment matters raised by Network participants include the general and ongoing need to:

- Maintain a relentless fight against any form of workplace harassment and discrimination; and,
- Ensure all workplaces and health systems have in place procedures and protocols that fully support health professionals in 'whistle blowing' – the proactive reporting of any concerns about a risk, wrongdoing or illegality at work, in the public interest – addressing evidenced barriers to this.⁴⁰

Occupational Health and Safety as an Inequalities Matter

Further to the above, our Workforce Networks identifies an Inequalities challenge in respect to occupational health and safety for professionals in cancer care. Origins for such inequalities include differences in:

- The effective deployment of up-to-date medical equipment

It is a commonly reported issue to our Network that more resource-constrained health systems are often, out of necessity, in the position of using, old, 'second-hand', or even outdated equipment for the delivery of medical procedures. Older equipment has a higher risk of failures and breakdowns, with, in some case, the potential for consequent safety problems both for the patient and the medical staff.

- The design and implementation of national clinical and organisational guidelines

Discrepancies are reported to us in the design, use and implementation of clinical and organisational

guidelines across Europe in cancer care, with potential impacts on occupational health and safety. This might include, for example, the repetitive conduct of medical procedures entailing risk with no available evidence of benefit for the patient, or of the failure to adopt safer and more beneficial medical and working procedures.

- The establishment and strengthening of a safety culture via education and training

Ensuring that the staff involved in the delivery of procedures entailing occupational health risks are adequately trained and compliant with best practice recommendations is instrumental to avoiding risks for professionals, while maximising the potential for cure and minimising the potential for adverse side effects in treated patients.

The Workforce Network believes that, in the context of combatting inequalities in health and cancer care, inequalities in workforce health and safety across Europe should also be addressed.

We call for:

- **Dedicated attention to occupational safety and health concerns of the cancer workforce within the 2021-27 EU Strategic Framework on Health and Safety at Work**, with measurement components to support implementation of the Strategy e.g. uptake of highlighted best practices and guidance;
- **EU funding tools, such as regional and structural funds, to be deployed to ensure much less reliance on old machinery in cancer control and treatment across all parts of Europe;** and,
- **Promoting and supporting the establishment of a strong safety culture among graduates and professionals**, in the context of the forthcoming EU 'Inter-specialty cancer training programme' and of other Commission initiatives relating to oncology workforce education.

Commenting on the Report's recommendations on protecting the safety and wellbeing of the Workforce, Dr Mirjam Crul, Network Co-Chair and Vice-President of the European Society of Oncology Pharmacy (ESOP), said:

"Every employee, in whatever line of work, has a right to expect their safety and wellbeing to be protected and ensured by their employer. Yet, as we identify in our paper, there are a range of hazards that healthcare professionals working in cancer care can be faced with. This includes potential hazardous exposures specific to

cancer care, psychosocial risks from workplace stress and pressure, and the ongoing need to ensure healthcare professionals are working in environments with strong patient safety cultures.

Our paper discusses these risks in turn and outlines the opportunities to go forward together in Europe in ensuring every working environment for cancer care professionals is as supportive and safe to employee wellbeing as possible."

4. Accelerate the Opening of Cancer Education, Training and Development Opportunities

Cancer control is in perpetual motion. Innovations and evolutions in science, technology and practice, when it comes to cancer control have been many. Current examples include digitalisation, Artificial Intelligence, big data, and the many elements comprising 'precision oncology'. Together they herald potentially significant further opportunities to improve the delivery of cancer prevention, diagnosis, treatment, care, follow-up and survivorship care, and ultimately the outcomes of the millions of Europeans affected by cancer.

While attention is rightfully provided to achieving equal access of patients to the latest developments in cancer control, equal attention is needed to ensure that cancer professionals and specialists can benefit from adequate education, training and development opportunities to keep up with the advances. Indeed, there can be no meaningful access to innovation and high-quality cancer control without an adequately, continuously trained cancer workforce to deliver it.

Testimony from a pathologist: *"The past decades have seen the development of numerous new biomarkers to determine most appropriate diagnostic tools. Not only should patients be given access to such new tools, but specialist pathologists or oncologists also need to be trained to acquire the adequate knowledge to efficiently conduct the biomarker testing. This should be seen as key to the achievement of Europe's Beating Cancer Plan's ambitions on personalised medicine."*

In meeting these challenges, technological solutions themselves can present an excellent pathway to improve and accelerate the training of the cancer workforce, in normal and in crisis conditions. However, appropriate frameworks need to be in place to ensure that these opportunities are adequately leveraged, and that the quality of the content is guaranteed along the process.

As already described, the unprecedented speed in the evolutions of science, technology and practice

in cancer care in the past decades has already prompted the development of numerous cancer professions, specialties, and sub-specialties, with corresponding education and training programmes. All signs show that this is unlikely to slow down in the decades ahead. Keeping pace with the education needs of the cancer workforce can put one in mind of the "Red Queen's race": *"It takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"*.⁴¹

Ensure that Educational Opportunity Covers the Entire Cancer Pathway

The successful provision of all the key components of cancer control involves a wide range of medical professions and specialties. As already mentioned, these include, but are not restricted to, radiology, pathology, surgical oncology, radiation oncology, interventional oncology, medical oncology, nuclear medicine, specialist cancer nursing, oncology pharmacy, primary care, palliative care, supportive care and psycho-oncology, as well as additional, organ- and age-specific, disciplines, such as mastology, gastroenterology, urology, pulmonology, dermatology, pancreatology, nephrology, haematology, hepatology, gynaecological oncology, neurology, geriatric oncology and paediatric oncology.

ALL these elements are crucial for the delivery of high-quality, multidisciplinary and multiprofessional cancer control to patients, and for the achievement of optimal patient outcomes. In light of an increasing cancer burden and of the breadth of opportunities and challenges associated to ever-faster innovations in the cancer field, it is therefore essential that ALL those involved in, or destining themselves to, the provision of cancer control and treatment can benefit from high quality and effective cancer education, training and development opportunities.

Importantly, beyond technological and scientific innovations applicable to cancer control, cancer education and training also needs to take account of wider ongoing paradigm shifts in the cancer field. Not least among them are the continuous increase of cancer survival rates and the general ageing of the European population. These require cancer systems to continually move their focus to a more integrated approach, aiming at achieving an optimal quality of life throughout the patients' cancer pathway. On the ground, these evolutions are associated with radical changes in practice, including:

- Stronger roles for specific medical specialties, such as supportive care, psycho-oncology, palliative care and geriatric oncology, in managing the long-term impacts of cancer and cancer treatment for patients, as well as the specific needs of older cancer patients;
- Earlier and more active consideration by professionals of the survivorship and quality of life needs of patients, including before and during the active treatment phase;
- Greater coordination between specialist cancer care providers and other disease specialists, such as cardiologists or bariatricians, to better manage cancer's complex interplay with other pathologies, including gateway diseases and comorbidities;
- Delivery of truly integrated cancer care, bringing together specialist cancer care providers and primary care professionals, whose roles are recognised as crucial for prevention and diagnosis, but also follow-up, survivorship and end-of-life care.^{42,43}

Against this background, the Workforce Network welcomes the recognition of cancer workforce education needs within the recently published Europe's Beating Cancer Plan, via the launch of an 'Inter-specialty cancer training programme', including *"a focus on patients' quality of life and well-being, including mental, psychosocial and nutritional support"*.⁴⁴ The proposed creation of new European Reference Networks focused on metastatic diseases, comorbidities in cancer care, palliative care and survivorship, is also seen as a promising development.

In the context of implementing Europe's Beating Cancer Plan, we call for:

- **Balanced attention to ALL cancer professions and specialties involved in cancer control** within the new 'Inter-specialty cancer training programme';
- **Pressing educational needs** in specific specialty areas, such as supportive care, psycho-oncology, palliative care and geriatric oncology; cancer comorbidities; and survivorship for all cancer professionals, **be an integral component of the creation of new European Reference Networks;**
- **A close involvement of corresponding professional societies in all EU level cancer educational initiatives, and the promotion of strengthened inter-professional collaboration on skills development.**

Beyond graduate and professional cancer education and training programmes, options should also be considered to promote stronger provision of cancer education to undergraduate medical students in universities. This could potentially be achieved under the new 'Health Literacy for Cancer Prevention and Care' initiative included within Europe's Beating Cancer Plan, and could serve as a means to increase cancer knowledge of all healthcare professionals, including primary care providers.

Contributing to the drafting of this report, Dr Sara Mac Lennan, Deputy Director of the University of Aberdeen's Institute of Applied Health Sciences and Academic Urology Unit, and member of the European Association of Urology's Guidelines Office, said:

"Europe's Beating Cancer Plan provides a good template for all countries to learn from, for example, in setting clear time based goals, and in covering the full pathway and policy concerns related to this including the survivorship and

quality of life of cancer patients. However, to really succeed on this, we cannot neglect the healthcare professional education components required to deliver these goals. Digitisation of education should provide professions with new opportunities to collaborate in providing multidisciplinary training on topics of such critical and joint interest as better management of late effects, or AI. We work together on these matters in routine daily practice. We should educate ourselves further on them together too."

Support Healthcare Professionals in Achieving Continuous Professional Development

Continuing professional development, is the ongoing process of developing, maintaining and documenting your professional skills. CPD helps to ensure that professional practice is up-to-date, contributes to improving patient outcomes and increases public confidence in the health professions.

In the compilation of this paper, and consultations with Network members, two policy concerns were expressed for attention in respect to CPD:

1. The need to ensure that employers provide professionals with the opportunity to conduct CPD

With reference to the difficulties experienced with workforce shortages in cancer care, short-staffing can often make it challenging for an individual to achieve time off from daily operations in order to conduct CPD. In other cases, employers may not be as financially supportive as would be hoped for in connection to fees associated to education and development opportunities e.g. Congress and training event registration fees.

Our Network calls on all employers within the cancer care sector across Europe to appreciate and respond to the high ethical and patient care need for healthcare professionals to conduct CPD. Employers have a responsibility to fulfil in this respect. A fully supportive environment should be provided to healthcare professionals seeking to pursue opportunities for their continuous professional development.

2. The opportunity for the next update of the EU Professional Qualifications Directive to go further in making CPD a mandatory component of being a recognised healthcare professional

An EU-funded mapping study, conducted in 2013 by the European Public Health Alliance and other partners, examined the state-of-play for CPD across Europe in respect to a number of healthcare professions, including doctors, nurses, midwives, pharmacists and dentists. The study found that nearly all EU countries have a form of mandatory CPD requirement for these health professions, with some limited exceptions.

Furthermore, during the most recent update to the Professional Qualifications Directive in 2013, an important (but not legally binding) recital clause was added by the European Parliament which included several interesting proposed aspirations for the EU's role in promoting CPD:

“Continuous professional development contributes to the safe and effective practice of professionals

*who benefit from the automatic recognition of their professional qualifications. It is important to encourage the further strengthening of continuous professional development for those professions. Member States should in particular encourage continuous professional development for doctors of medicine, medical specialists, general practitioners, nurses responsible for general care, dental practitioners, specialised dental practitioners, veterinary surgeons, midwives, pharmacists and architects. The measures taken by Member States to promote continuous professional development for those professions should be communicated to the Commission, and Member States should exchange best practice in that area. **Continuous professional development should cover technical, scientific, regulatory and ethical developments and motivate professionals to participate in lifelong learning relevant to their profession.**”*

Recital 15, Directive 2013/55/EU⁴⁶

Our Workforce Network recommends that, for the next revision of the Professional Qualifications Directive, the potential to legally codify the already widespread (but not yet universal) practice of CPD as a mandatory requirement for healthcare professionals be considered, alongside the proposals of Recital 15, Directive 2013/55/EU.

Contributing to the drafting of this report, Dr Mary Coffey, Adjunct Associate Professor of Radiation Therapy at St. James' Hospital, Dublin, and Chair of the Radiation Oncology Safety Committee of the European Society for Radiotherapy and Oncology, said:

"If we want to truly address issues like workforce shortage and patient safety then our health systems need to get more serious and organised when it comes to both career structures and education. These are not optional 'nice to do' elements of management. They are essential elements to ensuring systems can retain talent and allow healthcare professionals to offer the very best care to patients."

Digitalisation of Healthcare: Help Cancer Professionals Keep Up with the Opportunities of Technological Innovation

Digitalisation is revolutionising cancer care. In doing so, it is also heightening the needs for healthcare professionals to achieve appropriate levels of digital literacy.

Greater use of data and AI in cancer has well-known potentials to improve the efficiency of cancer control at all its steps, as well as the timeliness and relevance of cancer control policies. Some of these many benefits include:

- Risk-stratified cancer screening through identification and targeting of high-risk populations;
- AI-driven algorithms and machine learning allowing to predict and improve efficiency of screening programmes, pathological diagnosis, as well as of treatment and care strategies;
- Improved accuracy of cancer diagnosis through integration of genomic data;
- Electronic health records and interoperability of systems to allow data sharing, better communication between professionals taking care of a patient and optimal clinical decision-making based on a comprehensive record of the patient's interactions with the healthcare system;

- Elevated monitoring of treatment safety, quality and equity of care, as well as of patients' outcomes and quality of life during and beyond the treatment phase, including via Patient-Reported Outcome Measures (PROMs), resulting in improvements in treatment compliance and cancer professionals' clinical practice;
- Higher coordination between healthcare professionals throughout the patient pathway; and,
- Deployment of aggregated and real-time cancer data to facilitate health services research and timely policy decisions, in particular in crisis situations.⁴⁷

Furthermore, telemedicine, whose use has been steeply increased by the COVID-19 pandemic and the associated lockdown restrictions, entails great opportunities to ease both the access of patients to cancer professionals and specialists and the daily work of these healthcare providers, during and after the COVID-19 period. It has indeed been documented that telemedicine has increased the number of cases managed daily by primary healthcare professionals, helped to ensure continuity of care and research in cancer in spite of limited patient mobility and patients' reluctance to attend medical facilities, and facilitated connection between large and small cancer centres. Furthermore, telemedicine is also seen as having tremendous potential for the transformation of follow-up care, with a reduced burden for in-patient clinics. However, important concerns relating to associated regulatory frameworks, digital poverty and exclusion, and the respect of patients' preferences, need to be addressed concomitantly to its deployment.⁴⁸

The digitalisation of healthcare should be seen as key to achieving the EU's digital agenda and the digital transformation of European societies. Also in a digitally revolutionised world, the cancer workforce is and will stay the core and the engines of the European cancer systems. Thus, the realisation of the potential of digitalisation requires cancer professionals to develop their digital skills and keep up with digital innovations, through adequate frameworks and educational opportunities.

The Workforce Network welcomes the recognition, within the recently published Europe's Beating Cancer Plan, of cancer workforce education needs when it comes to helping them develop further skills relating to the digitalisation of healthcare,^{9,49} and looks forward to working with the Commission in the realisation of these commitments.

Meeting this digital challenge will likely entail the update of professional curricula, qualifications and requirements to include greater elements relating to digital skills. This therefore connects closely to previously made points about the importance of the Professional Qualifications Directive as a tool to help health systems meet new needs in professional education together.

A growing component of the digital skillset required by professionals working in cancer care relates to data literacy. As part of unleashing the potential of health data, healthcare professionals are increasingly closely involved in data registration roles. **Providing adequate training and education opportunities on data registration is therefore a crucial element of achieving EU goals on health data, including the vision for interoperable health data associated to the European Health Data Space.**

Distance Learning: A Great Potential to Be Tapped Through Quality Frameworks

Besides the digitalisation of healthcare, another profound transformation taking place within cancer education and training is the increased availability and participation in education programmes based on distance learning. Similarly to telemedicine, the COVID-19 pandemic has strikingly accelerated this pre-existing trend. As a matter of example, the Accreditation Council of Oncology in Europe of the European Cancer Organisation, an accreditation system allowing all Continuous Medical Education providers to seek recognition of the high quality of their education programmes,⁵⁰ has seen a 3-fold increase in the number of applications for distance learning programmes during the three first months of 2021, as compared to the past five years.

Such online cancer learning and education programmes have naturally a great potential in widening access to educational opportunity. Accordingly, distance learning may have a crucial role in helping Europe to combat inequalities as well as achieve major international ambitions in cancer

with educational aspects, such as the elimination of cancers caused by human papillomaviruses (HPV) as a public health problem.

Online tools also allow for greater flexibility in programme design and use, allowing attendants to individually assess their knowledge, reinforce their understanding through repeated viewings, and receive feedback in an easier manner. Beyond the COVID-19 era and the associated travel restrictions, distance learning can also help to achieve greater resource efficiencies and reductions in carbon footprints.

However, a key identified need by the Network is to ensure the quality of distance learning educational programmes. It is crucial that professionals working in cancer care are able to easily identify those programmes providing training according to the current best practices in the specialised field, and that Continuous Medical Education providers organising such programmes benefit from monitoring and recognition of the quality of their work.

In this context, our Network promotes and endorses the benefits of accrediting oncology education and training programmes.

⁹ "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." [Europe's Beating Cancer Plan, p.17.](#)

The Accreditation Council of Oncology in Europe

The Accreditation Council of Oncology in Europe (ACOE) provides accreditation to Continuing Medical Education (CME) providers (including Member Societies of the European Cancer Organisation) for the benefit of participants receiving education in oncology.

Accreditation by ACOE provides CME credits to participating delegates, recognising the high quality of the education delivered.⁵¹ More information is available at acoe.europeancancer.org

European Reference Networks – A Success to Take Inspiration from for the Digitalisation of Cancer Care and Education

European Reference Networks (ERNs) have been established by the European Commission in 2017 as virtual networks involving healthcare providers across Europe, in order to facilitate discussion on complex or rare diseases and conditions (including rare cancers) that require highly specialised treatment, and concentrated knowledge and resources.⁵²

These Networks are much praised in the cancer community as excellent examples of a successful deployment of digital tools to the benefit of cancer patients.^{53,54} Indeed, the ERNs are connected through a dedicated digital platform, called the Clinical Patient Management System (CPMS), through which ‘virtual’ advisory boards/multi-disciplinary team meetings of medical specialists can be convened, using telemedicine tools to review a patient’s condition for diagnosis or treatment. Such a tool has already provided invaluable wide-ranging benefits to improve patient care. These include the possibilities for health professionals to consult their peers and seek a second opinion from a panel of experts; to securely share medical information and high-resolution images, in accordance with the latest EU data protection legislative framework; and to build repositories of cases, which can subsequently be used as a large bank of data for further research. Importantly, such a success largely pertains to the simple design of the CPMS, as well as to the deployment of dedicated EU funds for the provision of adequate training to hospital staff, collectively greatly facilitating the use of this digital platform.

Beyond the direct improvement of patient care, ERNs are also seen as of tremendous potential for the EU to help meet the highly specific education, training and professional development needs in the area of rare and paediatric cancer, through targeted investment to support networking and distance learning programmes. Recent ERN developments with educational impact include:

- The **ERN Academy**, an **ERN Educational Platform** where all educational and training materials developed by the ERNs on the management of rare diseases and complex conditions requiring highly specialised health care will be publicly available; and,
- The ERN Exchange Programme, a clinical fellowship short term exchange programme (1 week) to spread knowledge between healthcare providers participating in ERNs.

Our Workforce Network calls on all European decision-makers to work together to ensure the provision of continued support to the ERNs and to take inspiration from their successes for the achievement of EU’s ambitions on the digitalisation of healthcare more widely.

Contributing to the drafting of this report, Michelle Battye, Project Manager of the ERN on European Reference Network on rare urogenital diseases and conditions, said:

“The European Reference Networks (ERNs) are becoming case studies of how we can enhance health cooperation across Europe in a digital age. ERNs provide a platform for specialised clinicians across many countries to come together and improve care for their patients via exchange and knowledge sharing.

Now that the Networks have become well established, perhaps it is time to consider their next stage of evolution. Already the ERN Exchange Programme is seeing an almost natural adoption of an education and training role to the platforms which might be built on further. With strong sustained resource support, ERNs could make a revolutionary difference in the provision of education and training opportunity in highly specialised areas of practice.”

Give the Cancer Workforce The Right Tools to Do the Job

Europe's healthcare professionals stand ready to do all in their power to help the EU achieve the ambitions of its Beating Cancer Plan.

With the above recommendations we trust that the EU, Member State Governments, Health Systems and employers will equally give their support to the army of professionals providing cancer care and treatment on a daily basis.

With the right tools to do their job, our cancer workforce will help Europe achieve new levels of success in our shared fight against cancer.

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Participants in the Workforce Network

Member Organisations Part of this Network



Patient Organisations Part of this Network



Charities and Foundations Part of this Network



To view the latest list of the participants to the Workforce Network, visit our [website](#).

If you would like to find out more about the Workforce Network, please contact us at: info@europeancancer.org

As the not-for-profit federation of member organisations working in cancer at a European level, the European Cancer Organisation convenes oncology professionals and patients to agree policy, advocate for positive change and speak up for the European cancer community.

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