european cancer ORGANISATION

Cancer, Security and Resilience: A European Agenda for Preparedness and Response



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b https://europeancancer.org/members
c https://europeancancer.org/patients
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Summary of recommendations

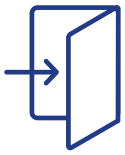
Placing health and cancer care within the EU's wider security agenda requires confronting not only the consequences of armed conflict but also less conventional threats, including cyberattacks and health-related misinformation and disinformation.

Section 1 of this paper, Rethinking European Security: Protecting Cancer Care in Times of Crisis, sets out recommendations to make the protection of healthcare systems and the continuity of cancer care an integral part of that agenda:

To protect cancer systems and patients facing the consequences of armed conflict, the EU and its Member States should:



Strengthen the protection and resilience of cancer care in the face of armed conflict, by supporting independent investigations and criminal accountability for unlawful attacks on healthcare, systematically integrating cancer and other non-communicable diseases into EU and Member State humanitarian planning and funding, and making the recovery and resilience of conflict-affected healthcare systems, including cancer services, a clear funding priority under Global Europe and the EU's broader external action.



Guarantee access to cancer diagnosis, treatment and follow-up for people displaced by armed conflict, regardless of where the conflict occurs or which Member State provides protection, by strengthening and harmonising the EU protection framework, mobilising European solidarity mechanisms to facilitate cross-border cancer care and addressing practical barriers to treatment, including language, cost and access to medical records.

To strengthen the security of cancer services against cyberattacks and safeguard continuity of care when digital systems are disrupted, the EU and its Member States should:



Turn EU cybersecurity commitments into concrete support for cancer centres and hospitals by ensuring the development and regular testing of contingency and business continuity plans, integrating the specific needs of cancer services into national cancer control plans and cybersecurity strategies, and safeguarding dedicated EU funding for healthcare cybersecurity under the next Multiannual Financial Framework 2028–2034, including through the European Competitiveness Fund's Digital Leadership window.

To protect public trust, strengthen health literacy and ensure access to reliable, evidence-based information on cancer prevention and care, the EU and its Member States should:



Make tackling health-related misinformation and disinformation an integral part of cancer prevention and care policies, as well as broader EU health and security frameworks, by fully implementing the 2024 Council Recommendation on vaccine-preventable cancers, systematically addressing misinformation and disinformation in National Cancer Control Plans, and strengthening the roles of the EEAS and HERA in monitoring and responding to health-related information threats, including foreign information manipulation and interference.

Protecting cancer care against security threats is only part of the challenge. Continuity also depends on the underlying resilience of Europe's healthcare systems. Shortages of specialised healthcare professionals, antimicrobial resistance and disruptions to the supply of medicines can undermine the continuity of cancer care within the EU, even in the absence of an immediate security threat.

Section 2, Rethinking EU Preparedness and Resilience to Safeguard Cancer Care, sets out recommendations to address these systemic vulnerabilities and strengthen the capacity of cancer services to maintain continuity of care, both in times of crisis and beyond.

To build on the lessons of COVID-19, prepare for future health emergencies and address growing pressures on Europe's oncology workforce, the EU and its Member States should:

Make continuity of cancer care an integral part of EU and national health emergency preparedness by developing cancer-specific guidance to maintain and restore essential services, introducing indicators to monitor disruptions to screening, diagnosis and treatment, and regularly testing preparedness through exercises and stress tests.

Strengthen the resilience of Europe's oncology workforce through an EU Action Plan addressing workforce planning, recruitment, retention and working conditions, systematic mapping of critical workforce shortages through HERA, EU standards for safe and stronger mechanisms to mobilise specialised healthcare professionals across borders when national capacity falls short.

To protect cancer patients and safeguard the continuity of care against the growing threat of antimicrobial resistance (AMR), the EU and its Member States should:

Strengthen EU and national action against AMR in cancer care by ensuring that National Cancer Control Plans and national AMR strategies address the specific risks facing cancer patients, developing cancer-specific guidance and indicators with the European Centre for Disease Prevention and Control (ECDC) on infection prevention, diagnostics and antimicrobial stewardship, translating One Health commitments into measurable action, and supporting antimicrobial innovation while ensuring equitable access to new and existing antibiotics.

To safeguard the continuity of cancer treatment and strengthen the resilience of supply chains essential to cancer care, the EU and its Member States should:

Strengthen the security and resilience of medicine supply chains essential to cancer care by reinforcing EU-level monitoring and coordination of shortages, diversifying suppliers and manufacturing capacity through the Critical Medicines Act, and improving European coordination of strategic stockpiles to prevent and respond to disruptions.



Introduction

> **Europe's Beating Cancer Plan is a key pillar of a stronger European Health Union and a more secure, better-prepared and more resilient EU.**
> European Commission, Europe's Beating Cancer Plan, February 2021

Through Europe's Beating Cancer Plan and the EU Cancer Mission, the EU and its Member States have placed the European continent at the forefront of the fight against cancer, with some of the world's most advanced cancer services and continued innovations in prevention, diagnosis and treatment.

Yet these achievements are increasingly exposed to threats extending far beyond the healthcare sector. Armed conflict and displacement threaten patients' access to treatment, while the growing digitalisation of cancer services increases their exposure to cyberattacks and the rapid spread of health misinformation and disinformation undermines public confidence in cancer care. Safeguarding Europe's cancer services against these threats and ensuring continuity of care during crises must become a cornerstone of Europe's security and defence agenda.

The need to protect cancer care goes hand in hand with the need to strengthen its resilience before the next crisis strikes. The COVID-19 pandemic has demonstrated the consequences of disrupted screening, delayed diagnoses and interrupted treatment, underlining the importance of investing in preparedness and continuity of care. These lessons are particularly relevant as persistent workforce shortages place cancer services under growing pressure, while antimicrobial resistance threatens the safety and effectiveness of cancer treatments. Addressing these vulnerabilities cannot wait until the next crisis puts cancer services under strain.

The political moment to strengthen the security and resilience of cancer care is now. Security, defence and preparedness occupy an increasingly prominent place in European policymaking, reflected in the European Commission's proposal for the next EU budget for 2028–2034 and its substantial increase in proposed investment in defence and security. This shift reflects Europe's changing security needs, but strengthening Europe's security and resilience must also extend to the healthcare services on which its citizens depend. Cancer care must therefore receive the political attention and investment needed to maintain essential services during future crises.

To put this ambition into practice, the European Cancer Organisation's Emergencies and Crises Network has drawn on the lessons learned from the impact of COVID-19 and Russia's war of aggression against Ukraine on cancer care, and is now broadening its work to address the evolving security threats and pressures facing cancer care, translating the expertise of the cancer community into concrete recommendations for European action.

Through this paper, Cancer, Security and Resilience: Proposals for Preparedness and Response, the European cancer community puts forward two priorities for EU action.

1. **Protecting the security of cancer care** against armed conflict, displacement, cyberattacks and health misinformation and disinformation.
2. **Strengthening the resilience of cancer services** by ensuring continuity of care during future emergencies, addressing workforce shortages and tackling antimicrobial resistance.

The words of Europe's Beating Cancer Plan must now be matched by action. European decisionmakers must make the protection and continuity of cancer care an integral part of Europe's security and preparedness agenda, backed by concrete political commitments and sustained investment.

Section 1. Rethinking European security: protecting cancer care in times of crisis

Russia's war of aggression against Ukraine has brought armed conflict back to the forefront of Europe's security agenda. At the same time, unconventional threats and hybrid warfare tactics, including cyber-attacks and the deliberate spread of disinformation, are increasingly reshaping the EU's security landscape.

Yet as political attention and resources shift towards defence and security, health and cancer care risk being overlooked despite their growing exposure to these threats:

- ***Since the beginning of Russia's full-scale invasion of Ukraine in 2022, a total of 3,502 attacks on healthcare infrastructure have been documented.***[1]
- ***The European Union Agency for Cybersecurity (ENISA) recorded 309 significant cybersecurity incidents affected the EU health sector in 2023, more than any other critical sector.***[2]
- ***According to the European Digital Media Observatory (EDMO), health-related disinformation accounted for 7% of all disinformation detected in the EU.***[3]

Europe must therefore rethink where health and cancer care fit within the EU's wider security agenda. Decision-makers must recognise that protecting healthcare systems, and their ability to keep cancer care running in times of crisis, is an integral part of Europe's security agenda.

This requires safeguarding hospitals and critical healthcare infrastructure, including radiology and diagnostic services and the equipment essential for cancer treatment, against the consequences of armed conflict, cyberattacks, and other security threats. It also requires countering misinformation and disinformation and their impact on public health and cancer care.

Against this background, section 1 of this paper:

- draws on the experience of Russia's full-scale invasion of Ukraine to highlight the urgent need to protect continuity of cancer care in armed conflict, from upholding international humanitarian law and protecting healthcare to securing access to cancer care for patients displaced by conflict;
- examines how the rapid digitalisation of cancer care is creating new cybersecurity risks for care, critical health data and medical infrastructure; and
- considers the growing threat of health misinformation and disinformation, from eroding confidence in vaccines to prevent cancer, to foreign information manipulation and interference (FIMI) undermining public health and cancer policy more generally.

1.1. Armed conflict: safeguarding cancer care in conflict-affected settings

> **Attacks on humanitarian personnel, hospitals, and civilian objects are not accidents, they are violations of international humanitarian law.**
> Kaja Kallas, High Representative for Foreign Affairs and Security Policy, and Hadja Lahbib, European Commissioner for Equality, Preparedness and Crisis Management, joint statement ahead of World Humanitarian Day, 19 August 2026

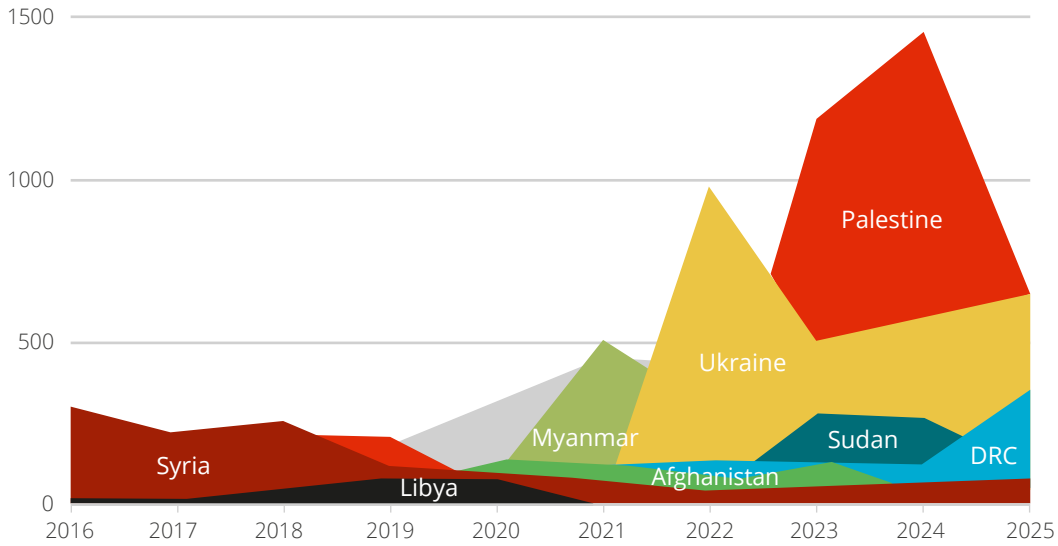
The Peace Research Institute Oslo (PRIO) recorded 65 state-based conflicts in 2025, the highest number since 1946.[4] From Russia's war of aggression against Ukraine and Israeli military attacks in Gaza to the armed conflicts in Sudan and Myanmar, the consequences of war extend far beyond the immediate human toll, undermining essential health services and threatening the continuity of care.

For people living with cancer, the consequences of armed conflict can be particularly severe. An estimated 1.57 million people with cancer are living in areas affected by conflict or humanitarian crises, approximately 1 in every 12 cancer cases worldwide.[5] For patients whose survival often depends on timely diagnosis and uninterrupted treatment, the consequences can be devastating. Hospitals are attacked or damaged, medicines and equipment become unavailable, healthcare professionals are displaced and killed and patients are forced to seek care far from home or left with none.

Attacks on healthcare systems further compound these challenges. In 2025 alone, the Safeguarding Health in Conflict Coalition (SHCC) documented 2,546 incidents of violence against healthcare systems across 33 countries, ranging from attacks on healthcare facilities to the killing and kidnapping of health workers.[6]

These figures underscore the persistent gap between international legal obligations to protect healthcare in armed conflict and the reality on the ground. In 2016, the United Nations Security Council unanimously adopted Resolution 2286, condemning attacks against healthcare systems and medical personnel, and reaffirming their protection under international humanitarian law.[7] Yet, a decade later, attacks on healthcare systems and cancer services persist, putting patients at risk and further threatening the continuity of care.

Building on *The Lancet's* manifesto 'Improving Cancer Care in Conflict-Impacted Regions'[8] and the cancer community's response to Russia's aggression against Ukraine, the following section sets out recommendations for EU action to protect cancer care during armed conflict, support its recovery, and safeguard care for those displaced.



Source: Insecurity Insight, presentation at the European Cancer Organisation's Emergencies and Crises Network meeting, 29 September 2026

REPORTED INCIDENTS AND MOST COMMONLY REPORTED CONCERNS

REPORTED INCIDENTS	INCIDENTS WHERE HEALTH FACILITIES WERE DAMAGED/ DESTROYED	HEALTH WORKERS KILLED	HEALTH WORKERS KIDNAPPED	HEALTH WORKERS ARRESTED
2,546	790	455	218	263

Source: Insecurity Insight for the SHCC.

A. Maintaining the continuity of cancer care during armed conflict

Russia's war of aggression against Ukraine has demonstrated the vulnerability of cancer care to armed conflict. As of the full-scale invasion in 2022, more than 3,500 attacks on healthcare systems have been reported.[9] Attacks on cancer centres, broken supply chains for critical medicines, and the loss or displacement of healthcare professionals and family members providing essential informal care have affected cancer care at every stage, from early detection and diagnosis to treatment, survivorship and end-of-life care.

I. Challenges and lessons from Ukraine

The impact of armed conflict on cancer care

An early assessment of the impact of Russia's full-scale invasion on cancer care in Ukraine, published in the Journal of Cancer Policy, estimated that 60–70% of cancer care in conflict-affected areas was disrupted during the first month of the invasion.[10]

The impact of the conflict on cancer care has extended well beyond the initial months of the invasion. In a 2023 survey, 21.5% reported delays in diagnosis and 20.5% reported delays in treatment.[11] Beyond disruptions to healthcare services, patients have continued to face the daily challenges of air raids and insecurity, interruptions to electricity and water supplies and the psychological strain of living under constant threat, further complicating access to and continuity of cancer care.

These challenges come against a continued need for cancer care, with more than 155.000 new cancer diagnoses recorded in Ukraine each year,[12] demonstrating the scale of cancer care that must continue despite the severe constraints imposed by armed conflict.

Sustaining and advancing cancer care during armed conflict

Despite severe and ongoing disruption, Ukraine's healthcare system has shown a striking capacity to adapt under prolonged conflict.

The European Cancer Organisation and the American Society of Clinical Oncology (ASCO) established the Special Network 'Impact of the War in Ukraine on Cancer',[13] bringing together more than 300 partner organisations worldwide to coordinate support for Ukrainian patients and services.

International cooperation also kept specialised care within reach when treatment could no longer be provided safely inside Ukraine. The World Health Organization (WHO) coordinated the deployment of more than 80 Emergency Medical Teams across Ukraine and neighbouring countries and supported the Ukrainian Ministry of Health in establishing three health hubs in the west of the country.[14] Working with the European Commission, these hubs facilitated the medical evacuation and cross-border referral of patients requiring specialised treatment, including cancer care, to hospitals across Europe.[15]

In parallel, eight Ukrainian cancer centres joined INTERACT-EUROPE 100, strengthening interdisciplinary care and cooperation between Ukrainian and other European professionals.[16]

Finally, Ukraine's government has gone beyond maintaining continuity of cancer care during the conflict. Despite the war, its Parliament has passed two laws expanding screening for breast, cervical and colorectal cancer,[17] while the government adopted its National Cancer Control Strategy until 2030 in August 2024, followed by an implementation action plan for 2026–2028 in February 2026.[18]

II. Priorities for EU action during armed conflict and recovery

Ukraine's experience demonstrates that cancer services can adapt and develop even during prolonged conflict, particularly when national efforts are reinforced by strong international cooperation. However, these achievements remain fragile, with continued attacks on healthcare and disruptions to essential services highlighting the need for a more coordinated and sustained response.

Building on the lessons learned from Ukraine, the following recommendations outline three priorities for EU actions:

Priority 1: Enforce international humanitarian law through independent investigation and criminal accountability for unlawful attacks on healthcare and cancer services

Safeguarding cancer care during armed conflict requires closing the gap between international legal obligations to protect healthcare and their enforcement in practice. Russia's war of aggression against Ukraine and conflicts elsewhere show how attacks on healthcare continue to disrupt essential services despite clear protections under international humanitarian law, reaffirmed by UN Security Council Resolution 2286.

The challenge lies not in the absence of legal protections, but in their effective enforcement. According to Insecurity Insight, as of 2026, only two convictions have been secured in international courts for crimes involving direct attacks on healthcare, illustrating the persistent lack of accountability.[19]

The EU and its Member States should take the lead in closing this accountability gap by strengthening the independent documentation of attacks, supporting thorough and impartial investigations and ensuring that those responsible are brought to justice. Ending impunity is the first but crucial step towards protecting healthcare and sustaining care during conflict.

Priority 2: Integrate cancer and other non-communicable diseases into EU and Member State humanitarian responses

Armed conflict can severely disrupt access to essential cancer care. During the first month of Russia's full-scale invasion of Ukraine, an estimated 60–70% of cancer care was disrupted, leaving patients struggling to access life-saving medicines, diagnosis and treatment.[20] In such circumstances, humanitarian assistance is vital to the more than 1.57 million people living with cancer in conflict-affected settings.[21]

Yet cancer and other non-communicable diseases (NCDs) are often overlooked in humanitarian responses. A recent analysis of cancer care during the conflict in Syria highlighted how humanitarian assistance tends to prioritise immediate medical emergencies and low-cost healthcare interventions, often leaving specialised oncology services inadequately addressed.[22] At the same time, the inclusion of cancer care in humanitarian assistance can make a significant difference. In 2018, a $1 million contribution from Kuwait enabled the WHO to supply hospitals across Syria with cancer medicines, sufficient for approximately 40.000 treatment courses.[23]

With the EU and its 27 Member States providing around 40% of global humanitarian assistance, Europe has an important role to play in addressing this gap. Cancer and other NCDs should therefore be systematically included in humanitarian needs assessments, response planning and funding priorities.



The proposed €25 billion for humanitarian assistance under the Global Europe Instrument in the Multiannual Financial Framework 2028–2034 is the chance to do so, including through targeted funding to maintain access to essential cancer medicines, diagnostic services and continued treatment in conflict settings.

Priority 3: Make recovery and resilience of conflict-affected healthcare systems a funding priority under Global Europe and the EU's broader external action

While integrating cancer care into humanitarian responses is necessary to address immediate needs, long-term investment is equally crucial to restoring essential services and strengthening resilience. Beyond repairing damaged infrastructure, this requires rebuilding diagnostic and treatment capacity, addressing shortages of specialised healthcare professionals and preparing health services to withstand future disruptions.

In Ukraine alone, healthcare recovery and reconstruction needs are estimated to be €20.9 billion between 2026 and 2035, according to a recent European Parliament budgetary briefing.[24] While the European Commission's proposal for the Multiannual Financial Framework 2028–2034 foresees up to €88.9 billion for Ukraine through the proposed Ukraine Reserve, no specific allocation is guaranteed for healthcare reconstruction or the recovery of cancer services.[25]

The EU and its Member States should therefore make the recovery and resilience of healthcare systems, including cancer care, a clear funding priority under Global Europe. Building on the lessons from Ukraine, sustained and identifiable investment should support cancer services affected by armed conflict, both during hostilities and throughout recovery. This commitment should extend beyond Ukraine to other conflict-affected regions worldwide, ensuring that the continuity and long-term recovery of cancer care become integral priorities of the EU's response to armed conflict and its broader external action.

Building on these lessons, European institutions, national governments, humanitarian actors and the wider cancer community should:

1. ***Strengthen the enforcement of international humanitarian law by ensuring independent investigations and criminal accountability for unlawful attacks on healthcare systems and cancer infrastructure,*** *in line with UN Security Council Resolution 2286.*
2. ***Integrate cancer and other non-communicable diseases into EU and Member State humanitarian responses****, with attention to humanitarian planning, funding and the continuity of essential care during armed conflict.*
3. ***Invest in the recovery and resilience of conflict-affected healthcare systems, including cancer services, as an integral part of funding under Global Europe and the EU's broader external action****, during conflict and throughout recovery.*

B. Ensuring continuity of cancer care for displaced patients across the EU

Alongside damage to Ukraine's healthcare system and cancer services, Russia's war of aggression has displaced millions of Ukrainian citizens across Europe.[26] Among them are people living with cancer whose specific and often time-sensitive healthcare needs do not always align with the organisation, capacity or treatment pathways of healthcare systems receiving them.

The EU's efforts to sustain their care, and the barriers met, offer important lessons for people displaced by armed conflict more broadly, particularly those moving across borders and between health systems.

I. Lessons learned from Ukraine

A 2023 study estimated that, among the 6 million Ukrainians who fled their country during the first four months of the full-scale invasion, more than 40,000 were living with cancer. Most initially fled to neighbouring countries, including Poland, Hungary, Moldova, Romania and Slovakia.[27] This translated into a significant but uneven increase in demand for cancer care across receiving countries. In Poland, for example, Ukrainians forcibly displaced by the conflict were estimated to represent 5–10% of all cancer patients.[28]

A fragmented landscape across Member States

The main EU framework governing access to healthcare for displaced Ukrainians has been the Temporary Protection Directive (2001/55/EC) (hereafter TPD), activated through *Council Implementing Decision (EU) 2022/382*. Under the TPD, beneficiaries are entitled to healthcare in their host Member State. However, these provisions do not necessarily guarantee that displaced Ukrainians have access to cancer care in all Member States.

First, healthcare remains primarily a national competence, leaving Member States considerable discretion over the scope of healthcare coverage provided when implementing the directive (Art. 13(2) TPD). As a result, access differs across the EU. In some Member States, displaced Ukrainians have access equal or broadly equivalent to that available to nationals and legal residents, including treatment for chronic diseases such as cancer, while in others coverage is limited to primary, acute or emergency care.[29]

> **If Ukrainian refugees are ill upon entry or become ill during their stay in Germany, they will receive medical care in Germany. For cancer patients, this usually means that the necessary oncological treatment will be continued or even started.**
> The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ)

A further limitation is that the Framework of the Temporary Protection Directive has so far only been activated in response to Russia's war of aggression against Ukraine. This means that cancer patients fleeing other conflicts, including those in Gaza, Sudan and Myanmar, must rely on other protection frameworks when seeking protection in EU Member States. These frameworks provide more limited healthcare entitlements, with access to specialised cancer treatment even less certain.

Overcoming barriers to cancer care by displaced people

Even where the Temporary Protection Directive applies and its implementation by Member States provides formal entitlement to cancer care, this does not necessarily translate into effective access to cancer services or continuity of treatment.

Pre-existing capacity and resource constraints of the host country's healthcare system, language barriers, bureaucratic hurdles, and cross-border information gaps, such as difficulties obtaining or accessing patient medical records, continued to impede effective access to cancer care.[30]

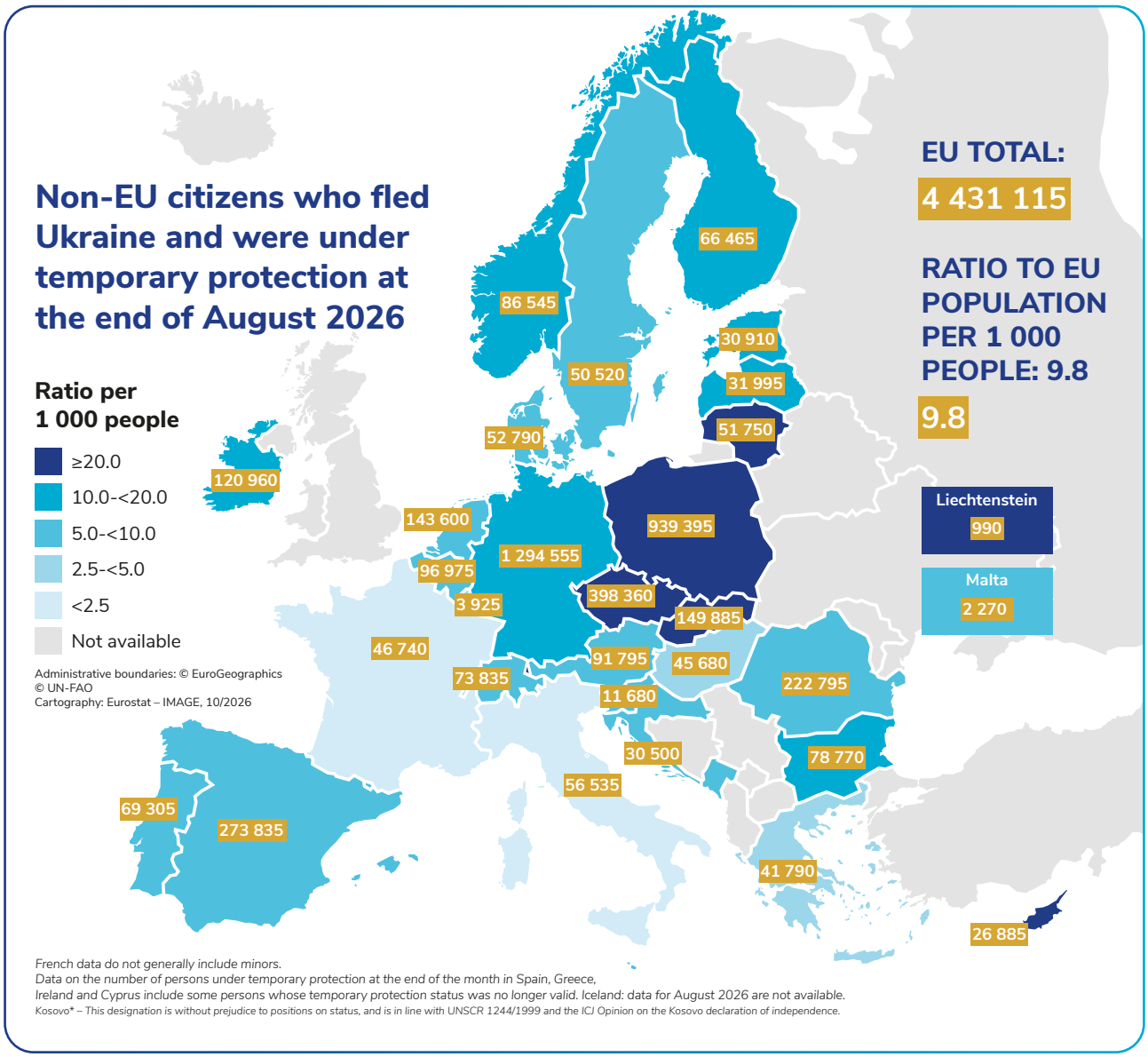
Another barrier can arise from financial constraints due to differences in the implementation of healthcare entitlements across Member States. While displaced cancer patients may benefit from free access to cancer services in some Member States, in others they may be required to cover treatment costs themselves, often limiting their access to cancer care in practice.

Priority 1: Addressing capacity constraints and uneven pressures on national healthcare systems

According to data from Eurostat, 4.43 million people displaced by Russia's war of aggression were benefiting from temporary protection in the EU by August 2026. However, 59.4% of those receiving temporary protection were granted in just three Member States (Germany, Poland and the Czech Republic), highlighting the uneven distribution of displaced Ukrainians across Europe.[31]

This uneven distribution places additional pressure on healthcare systems in the main host countries, many of which were already facing capacity constraints. In a 2022 ECO-ASCO survey, 55% of responding cancer care providers and patient organisations reported capacity constraints in caring for displaced Ukrainian cancer patients.[32] European cooperation and solidarity are therefore essential to sharing the burden between Member States, alleviating pressure on overstretched healthcare systems and ensuring access to specialised cancer care across borders.





The EU's response to the displacement of Ukrainians offers important examples of how such cooperation can work in practice. Through the Union Civil Protection Mechanism (UCPM), the EU coordinated the transfer of patients requiring specialised treatment to hospitals across Europe.[33] In parallel, the EU provided €4 million through EU4Health for a joint project with the WHO and the International Organization for Migration (IOM) to improve effective access to healthcare for displaced Ukrainians benefiting from temporary protection in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, and Slovakia.[34]

These initiatives demonstrate the value of European solidarity mechanisms in helping Member States respond to uneven healthcare demands and offer important lessons for strengthening cross-border cooperation and safeguarding continuity of cancer care for people displaced by armed conflict.

However, even where such European solidarity mechanisms are in place, host countries must ensure that other practical barriers, such as out-of-pocket costs for cancer treatment, language barriers and difficulties accessing patient medical records, do not continue to impede access to and continuity of cancer care for displaced patients.

Priority 2: Helping displaced cancer patients navigate healthcare systems and overcome barriers to treatment

Beyond the capacity constraints faced by receiving healthcare systems, displaced cancer patients face additional practical barriers to accessing and continuing treatment, including financial constraints arising from differences in healthcare coverage, language barriers and difficulties obtaining or transferring medical records across borders.

To overcome language barriers several initiatives were established in the aftermath of the Russian war of aggression against Ukraine. The ECO-ASCO Special Network established onco-help.org, providing Ukrainian cancer patients WHO with multilingual information on cancer services available across Europe,[35] while the World Health Organization Country Office in Romania established a free translation and interpretation hotline to facilitate direct communication between Ukrainian patients and healthcare providers.[36]

Bureaucratic hurdles and difficulties accessing medical records across borders have posed further challenges to ensuring continuity of cancer care for displaced patients. In a survey assessing the impact of the displacement of Ukrainian cancer patients on cancer services in neighbouring and receiving countries, 53% of responding organisations reported difficulties accessing patients' medical records, while 42% reported a lack of medical records altogether.[37]

At a cancer centre in Poland for example, healthcare professionals had to contact Ukrainian hospitals directly to electronically retrieve missing medical records of displaced cancer patients. This highlights the need for more effective mechanisms to facilitate the cross-border exchange of medical information for displaced cancer patients displaced.

II. EU priorities for patients displaced by armed conflict

The lessons learned from Ukraine and the experience of more than 40,000 displaced Ukrainian cancer patients seeking care across Europe have highlighted the limitations of a highly fragmented European framework.

While the framework of the Temporary Protection Directive provides displaced Ukrainians with healthcare entitlements, effective access to cancer care still depends on the individual Member States. In countries such as Germany, displaced people benefit from extensive healthcare coverage, often under conditions equivalent to those available to national citizens, while in other Member States access to the national healthcare system remains limited, excluding displaced people from essential cancer services.

A further limitation is that the Temporary Protection Directive has only been activated in response to Russia's war of aggression against Ukraine. Cancer patients displaced by conflicts elsewhere must therefore rely on other, often less comprehensive protection frameworks, making access to essential cancer services even more difficult.

These disparities, both between Member States in their implementation of the Temporary Protection Directive and between displaced patients covered by different protection frameworks, highlight the need for a coordinated European approach to safeguarding access to – and continuity of – cancer care for people displaced by armed conflict.

Priority 1: Revise and harmonise the EU protection framework so that everyone displaced by armed conflict can access care.

The EU protection framework must ensure that access to cancer care does not depend on where the conflict occurs or which Member State offers protection.

A first step is to activate the Temporary Protection Directive framework (Council Directive 2001/55/EC) beyond Ukraine. Though activated only in response to Russia's invasion, Article 2(c)(i) explicitly includes people fleeing armed conflict, without limiting its scope to any particular conflict. Its activation for people displaced by other conflicts is therefore already possible under Article 5 but requires the necessary political commitment from the EU and its Member States.

A second step is for Member States to ensure consistent interpretation and implementation of the Directive to guarantee effective access to cancer care. Article 13(2) requires Member States to provide beneficiaries of temporary protection with medical care, including, at a minimum, 'emergency care and essential treatment of illness'. However, differences in how Member States interpret and implement this provision can limit displaced patients' access to cancer services.

The EU and its Member States should therefore apply Article 13(2) consistently, guaranteeing access to cancer diagnosis, treatment and follow-up care in host countries, rather than limiting healthcare coverage in practice to emergency or basic services.

Priority 2: Mobilise EU coordination to enable cross-border care and overcome practical barriers

Even a comprehensive framework does not guarantee effective access. Language, cost and pressure on host services can still disrupt effective access to cancer care

The EU should therefore develop common guidance and strengthen coordination and solidarity mechanisms to help Member States overcome these barriers. This should build on existing instruments, such as the Union Civil Protection Mechanism, to facilitate medical transfers and the sharing of healthcare responsibilities between Member States, especially where systems face capacity constraints.

The needs of displaced people should also shape implementation of the European Health Data Space (EHDS) to secure cross-border exchange of medical records. At the same time, advances in AI-assisted translation offer new opportunities to overcome language barriers and help patients navigate services across the EU.

Building on these lessons, European institutions, EU Member States, international organisations, civil society and the wider cancer community are recommended to take the following actions:

1. **Strengthen the EU protection framework for people displaced by armed conflict, with consistent and enforceable guarantees of access to cancer care, wherever the conflict is and whichever Member State protects them.**
2. **Mobilise EU coordination and solidarity mechanisms to enable cross-border cancer care and overcome practical barriers faced by displaced people in host countries.**

1.2. Cybersecurity as a prerequisite for protecting cancer care

> **There can be no secure healthcare without cybersecurity.**
> Oliver Varhelyi, EU Commissioner for Health, January 2025

The healthcare sector has become a prime target for cyberattacks. Hospitals and cancer centres hold valuable and sensitive data, while becoming increasingly dependent on digital infrastructure for diagnosis, treatment, medicines, patient records and medical technologies.

This transformation brings enormous opportunities for cancer care, but it also creates new vulnerabilities: A cyberattack targeting critical healthcare infrastructure and patient data can rapidly become a serious threat to the continuity of cancer care, as illustrated by the 2021 cyberattack on Ireland's Health Service Executive (see box below).

When cyberattacks disrupt cancer care – A case study of the 2021 attack on Ireland's health service

The 2021 ransomware attack on Ireland's Health Service Executive (HSE) illustrates how cyberattacks on healthcare infrastructure can directly disrupt cancer care.[38]

At Cork University Hospital Cancer Centre, it forced the temporary suspension of radiotherapy and cancer surgery. Diagnostic imaging capacity fell by 90%, while average histopathology reporting times, essential for cancer diagnosis and treatment decisions, more than doubled, from 7 to 15 days.[39]

In total, 113 patients had their radiotherapy treatment interrupted, demonstrating how a cyberattack can disrupt essential services across the entire cancer care pathway and threaten continuity of care across Europe.[40]



€300,000

Median cost of a major security incident in the health sector



309

Cybersecurity incidents reported in the healthcare sector in 2023



22%

Of incidents resulted in disruption to patient care and healthcare services

I. The digital revolution of cancer care in Europe

These risks must be read against the rapid digitalisation of cancer care across Europe. As highlighted in the ECO's paper Unlocking the Potential of Digitalisation in Cancer Care: No Stopping Us Now![41] digitalisation is transforming prevention, diagnosis and treatment, while accelerating research and innovation.

Across Europe, this digital revolution of cancer care is being supported by new EU frameworks. Regulation (EU) 2025/327 on the European Health Data Space, will increase the ability of electronic health data to be accessed and shared across borders, while the European Cancer Imaging Initiative, a flagship of Europe's Beating Cancer Plan, is connecting imaging data across Europe for more accurate diagnosis and personalised treatment.

Digital tools are also becoming increasingly embedded in everyday cancer care. A 2024 survey of radiation oncology departments in Germany, Austria and Switzerland found that almost 70% used electronic patient records, with half already operating entirely without paper records. However, the adoption of these technologies remains uneven across Europe.[42]

Diagnosis and treatment are changing too. The OECD's 2026 report on high-value cancer care found that 16 European countries had introduced robot-assisted cancer surgery through national or regional programmes or pilots, while 10 countries had implemented AI-assisted imaging for screening.[43] As these tools become integral to care, their security is becoming integral to its continuity and safety.

II. The growing cybersecurity threats to cancer care

Digitalisation opportunities come with new vulnerabilities. Cancer centres increasingly store and exchange large volumes of sensitive, valuable patient data, while cancer diagnosis and treatment depend on interconnected digital systems and medical technologies.[44] This combination of valuable data and growing dependence on digital infrastructure makes cancer services particularly vulnerable to cyberattacks. Patient records can be stolen, corrupted or encrypted through ransomware, while attacks on critical digital systems can directly compromise the continuity and safety of cancer care.[45]

The sections below examine the scale of cyberattacks on healthcare, their consequences for care and patient safety, and their economic cost.

Healthcare sector is among Europe's most targeted sectors

The European Union Agency for Cybersecurity (ENISA) reported 309 significant cybersecurity incidents in the EU health sector in 2023, while the European Policy Centre identified healthcare as one of the EU's most targeted critical sectors, with cyberattacks reaching systems in nearly every EU Member State.[46]

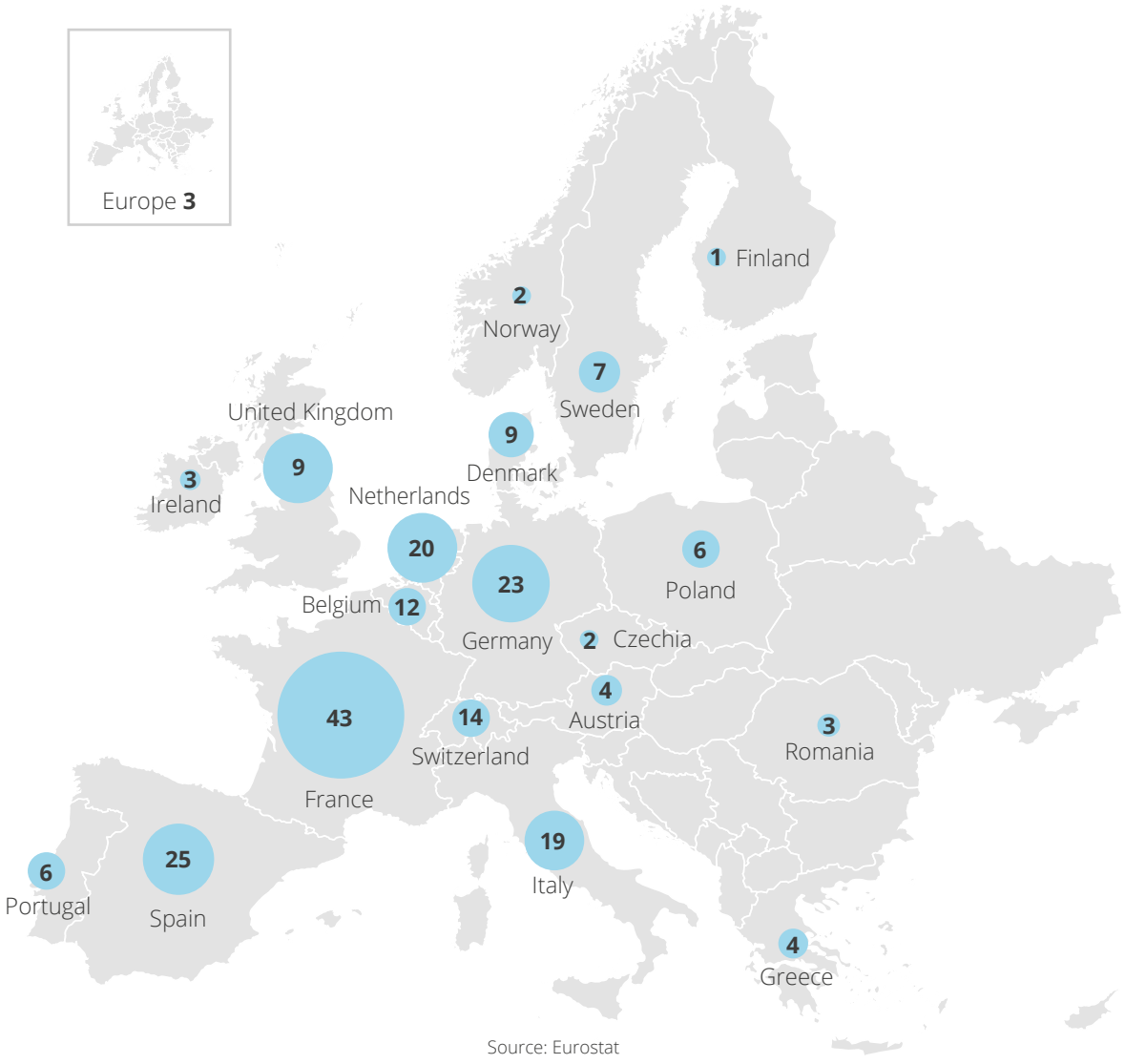
However, preparedness against cyberattacks remains uneven across European healthcare institutions. According to ENISA, more than 50% of healthcare providers lack clearly defined cybersecurity responsibilities, while significant gaps persist in risk management, threat detection and incident response preparedness.[47]

Disruptions to cancer care and patient safety

Cancer services have not been spared. Recent attacks include the 2022 ransomware attack on the Saint-Doulchard oncology centre in France[48], a breach at the Bank of Cyprus Oncology Centre[49] and the 2021 attack on Ireland's national health service, which hit every public radiotherapy centre in the country.[50]

These attacks illustrate the serious consequences cyberattacks can have for the continuity of essential cancer services. In Ireland, the 2021

Map of incidents observed (January 2021 to March 2023)



Source: Eurostat

attack led to the suspension of radiotherapy services, disruptions to diagnostic imaging and average pathology reporting times more than doubling.[51] Similarly, in France, the 2022 ransomware attack on the *Institut de Cancérologie du Centre Saint-Doulchard* led to the suspension of chemotherapy for more than three days.[52]

The lesson is clear. A cyberattack on the infrastructure supporting cancer care can interrupt diagnosis and treatment within hours, while recovery can take months. (as with the four-month restoration of medical imaging access following Ireland's 2021 cyberattack).[53] Protecting cancer care therefore requires more than securing patient data and digital systems. It means building cybersecurity into healthcare planning to safeguard continuity of care and patient safety.

The economic cost of cyberattacks on healthcare

The EU Agency for Cybersecurity (ENISA) estimated the median cost of a major cybersecurity incident in the health sector at €300,000 (along with banking, the highest economic cost of any sector examined).[54]

Individual cases can be substantially higher. The European Economic and Social Committee (EESC) cited losses of up to €20 million from a single attack on the healthcare sector in France,[55] while an analysis of six incidents at Portuguese public hospitals estimated financial losses between approximately €116,000 and €2.3 million.[56]

These figures make the economic case hard to ignore. Attacks divert resources from patient care, disrupt services and impose costs well beyond the health sector. Investing in the cybersecurity of health and cancer services protects patients, ensures continuity of care, safeguards public resources, and strengthens Europe's economic resilience.

III. Making cybersecurity a central pillar of Europe's cancer care

The EU has increasingly recognised cybersecurity as an essential component of healthcare resilience. A major advance came in January 2025 with the European Commission's ***Action Plan on the Cybersecurity of Hospitals and Healthcare Providers***, bringing together measures to prevent and detect cyber threats, strengthen response and recovery, and deter attacks against health systems.[57]

The challenge now is translating these commitments into practice. For cancer centres and hospitals, this means not only reducing the risk of cyberattacks but also ensuring that essential services can continue when digital systems are disrupted. Recent attacks have shown that without dedicated preparedness and continuity planning, cancer services can remain highly vulnerable to disruption, with immediate consequences for diagnosis and treatment.

The vulnerabilities and continuity needs of cancer care must therefore be built into cybersecurity planning at every level,[58] from coordinated EU action and national strategies to tested emergency and continuity plans within each organisation.

Priority 1: Ensure dedicated support for cancer centres and hospitals to develop and test contingency and business continuity plans

Cancer centres need dedicated and regularly tested contingency arrangements to maintain access to patient information, diagnostic and laboratory services, radiotherapy, surgery and other time-critical treatments when digital systems fail.

National authorities have a key role to play in supporting such preparedness. Existing national initiatives provide useful examples. Following the 2021 cyberattack on Ireland's health service, the National Cancer Control Programme (NCCP) coordinated a national response to disruptions in radiotherapy services, including patient prioritisation and coordination between the centres.[59] In France, the *CaRE programme* (Cybersécurité et Résilience des Établissements) helps healthcare establishments build business continuity and recovery plans.[60]

At EU level, ENISA could provide further assistance through the planned European Cybersecurity Support Centre, established under the EU Action Plan on the Cybersecurity of Hospitals and Healthcare Providers.[61] The proposed revision of the EU Cybersecurity Act, which would strengthen ENISA's mandate, offers a further opportunity to improve cybersecurity preparedness and resilience across the healthcare sector.[62] Its guidance, training and practical help should explicitly address the specific vulnerabilities of cancer services and the need to sustain care during an attack.

The cancer community has its own role to play in developing guidance and sharing good practice.

Best practice: ESTRO's cybersecurity framework for radiation oncology

The European Society for Radiotherapy and Oncology (ESTRO) has taken an important step towards strengthening cybersecurity in cancer care through its dedicated cybersecurity framework for radiation oncology departments.[63]

It offers practical guidance to help departments prepare for, respond to and recover from attacks, with an emphasis on maintaining essential services when digital systems fail. This includes developing business continuity plans and clear contingency procedures to minimise interruptions to radiotherapy.[64]



Priority 2: Safeguard dedicated EU funding for the cybersecurity of healthcare systems and cancer services under the Multiannual Financial Framework 2028–2034

In 2025, the EU's Digital Europe Programme allocated €30 million specifically to hospitals and healthcare providers to strengthen their capacity to detect, monitor and respond to cyber threats, in line with the *EU Action Plan on the Cybersecurity of Hospitals and Healthcare Providers.*[65]

With negotiations on the Multiannual Financial Framework 2028–2034 ongoing, the continuation of dedicated EU funding for healthcare cybersecurity remains uncertain. The European Commission proposes to integrate the Digital Europe Programme into the broader Digital Leadership window of the new European Competitiveness Fund (ECF). While this window has an indicative budget of €51.5 billion and explicitly covers cybersecurity, no funding is specifically earmarked for the cybersecurity needs of healthcare systems and cancer services.[66]

As MFF negotiations proceed, it is essential that the EU's future Digital Leadership work programmes explicitly recognise the cybersecurity needs of hospitals and cancer centres and provide dedicated funding for cybersecurity preparedness and business continuity planning of the healthcare sector.

European institutions, Member States, international organisations, civil society and the wider cancer community are encouraged to:

1. ***Support cancer centres and hospitals to develop and regularly test contingency and business continuity plans,*** *through support mechanisms in national cancer control plans and tailored help from ENISA's European Cybersecurity Support Centre*
2. ***Safeguard dedicated EU funding for the cybersecurity of healthcare systems and cancer services under the Multiannual Financial Framework 2028–2034 and future work programmes,*** *ensuring the needs of hospitals and cancer centres are met in the European Competitiveness Fund's Digital Leadership window*

1.3. Misinformation and disinformation as threats to secure cancer care

> **Implement [...] the model for evidence-based awareness-raising campaigns on the importance of HPV and HBV vaccination aimed to improve cancer prevention and fight against mis- and disinformation and with the overall goal of increasing health literacy.**
> Council of the European Union, Council Recommendation on Vaccine Preventable Cancers (C/2024/4259), 21 June 2024

Misinformation and disinformation are nothing new. From wartime propaganda and Cold War influence campaigns to the 2016 Brexit referendum and the COVID-19 pandemic, false and misleading claims have long shaped public debate.[67] What has changed is the speed and scale at which such information can spread. Social media, digitalisation and, more recently, artificial intelligence have transformed the information landscape and widened their reach.

For the cancer community, the concern is the growing toll on public health. In 2020, the WHO warned of a global 'infodemic': misinformation spreading rapidly through social media and eroding trust in healthcare professionals and institutions.

This section examines the growing impact of misinformation and disinformation on cancer prevention and care, drawing on HPV vaccination as an illustration, alongside the policy response and the further action needed at EU and national level.

The definitions used here follow the WHO's, with the key difference between the two being knowledge and intent:

Understanding mis- and disinformation

Misinformation – ***'the spread of false information without the intent to mislead'***

Disinformation – *'information designed or spread with full knowledge of it being false [...] as part of an intention to deceive and cause harm'*

Source : World Health Organization, "Disinformation and Public Health", February 6, 2024

A. From the COVID-19 infodemic to AI: the changing landscape of health mis- and disinformation

COVID-19 was a wake-up call. False claims about the virus, vaccines and treatments spread rapidly online, undermining public health communication and trust in health authorities. A systematic review found that COVID-19 misinformation accounted for between 0.2% and 28.8% of the analysed social media content.[68]

This problem only grows as more people turn to the internet and social media platforms for health information. According to Eurostat, between 2015 and 2023 the share of people aged 25–34 using the internet for health information increased from 56% to 65%. This trend is also evident in cancer care, with around half of patients seeking information online about their disease and treatment.[69] At the same time, the WHO has warned that artificial intelligence adds a further dimension, letting convincing health disinformation be produced and disseminated rapidly and at scale.[70]

This growing use of online health information makes cancer care particularly vulnerable to misinformation and disinformation, swaying decisions on prevention, diagnosis and treatment. An analysis of 200 cancer-related articles on social media found that 32.5% contained misinformation.[71] Such content risks delaying diagnosis and treatment, discouraging evidence-based care and promoting ineffective or potentially harmful interventions.[72]

B. The Case of HPV vaccination

The impact of health misinformation is particularly relevant in cancer prevention. An analysis of nearly 4,000 HPV-related posts on Twitter found 24% contained mis- or disinformation.[73] Most concerned alleged adverse effects (59%), with a substantial proportion of them falsely claiming that the HPV vaccine itself causes cancer (17%).[74] Worse, such posts travelled farther and were more than five times as likely to be retweeted.[75]

The stakes are high, given HPV vaccination's power to prevent cancers. The European Centre for Disease Prevention and Control (ECDC) has stated: 'the elimination of cervical cancer in the EU/EEA is becoming an achievable goal, thanks to the HPV vaccination programmes.[76] Most recently, a landmark study in *The Lancet* found that no women aged 20–24 in England died from cervical cancer between 2020 and 2024, following the rollout of the HPV vaccination programme in 2008. Earlier, a nationwide Swedish study published in the *New England Journal of Medicine* found that HPV vaccination before the age of 17 was associated with an 88% lower risk of invasive cervical cancer.[77]

Against this evidence, misinformation that erodes confidence in HPV vaccination directly threatens prevention policies and achieving Europe's Beating Cancer Plan targets for HPV vaccination – at least 90% of girls vaccinated and a significant increase among boys, as well as the WHO's global goal of eliminating cervical cancer.[78]

Where health disinformation meets foreign interference

'Russian media have deployed a "significant disinformation campaign" against the West to worsen the impact of the coronavirus, generate panic and sow distrust' [79]

While some health disinformation directly seeks to undermine public health measures, health debates are also exploited in foreign influence operations with broader geopolitical objectives. An analysis of vaccine-discourse on Twitter identified accounts linked to Russian influence operations working on both sides of the debate.[80] Among messages using a vaccine-related hashtag associated with Russian troll accounts linked to a government-backed company, 43% were pro-vaccine and 38% anti-vaccine.[81]

This suggests that foreign interference may not always seek to undermine public health directly. Instead, public health debates can be weaponised to amplify controversy and deepen division for geopolitical ends. The damage to public health is real all the same, eroding trust in health authorities and in evidence-based measures such as HPV vaccination.

The EU increasingly addresses this through its work on Foreign Information Manipulation and Interference (FIMI), led by the European External Action Service (EEAS). Health disinformation should therefore be recognised not only as a public health problem but as part of Europe's wider resilience against foreign interference.

C. Strengthening Europe's response

Since the European Commission's 2018 Communication *Tackling Online Disinformation: A European Approach,* initiatives such as the 2025 Code of Conduct on Disinformation and the Rapid Alert System (RAS) have strengthened Europe's response – but mostly without accounting for the specific challenges of health-related mis- and disinformation.

I. Recognising health mis- and disinformation as a priority

Attention to the specific threats to public health is now growing. The European Commission's 2026 Global Health Resilience Initiative makes fostering trust in science and countering health mis- and disinformation one of its five priorities, including through better access to reliable scientific information and stronger cooperation on public health communication. This marks an important

step towards recognising health as a distinct component of Europe's response. As frameworks continue to develop, specific attention should be given to cancer and other non-communicable diseases (NCDs).

II. Integrating the response into national cancer control policies

France shows how. Its 2021–2030 Ten-Year Cancer Control Strategy includes action against cancer misinformation, implemented by the French National Cancer Institute (INCa).[82] Through its 'Les éclairages' platform, citizens can report potentially questionable cancer claims, which are then assessed and addressed through accessible, evidence-based information.

Embedding this work in national cancer control plans would be an important step towards a more systematic European response. However, cancer control policy cannot address the challenge alone. It also needs stronger digital health literacy, support for healthcare professionals in addressing misinformation, and closer cooperation and data-sharing with online platforms and researchers.

Together, the following measures could catch false claims earlier and strengthen access to reliable information:

1. ***EU Member States should fully implement the 2024 Council Recommendation on vaccine-preventable cancers, with particular attention to tackling health mis- and disinformation*** *through evidence-based HPV and HBV vaccination campaigns, stronger health literacy and measures to build public confidence in vaccination.*
2. ***National Cancer Control Plans and strategies should address cancer-related mis- and disinformation****, including ways to identify harmful narratives, strengthen access to trusted evidence-based information, and equip healthcare professionals and cancer organisations to respond effectively.*
3. ***The European External Action Service (EEAS) should be at the forefront of identifying and countering health-related Foreign Information Manipulation and Interference****, ensuring that health and cancer-related narratives are covered by EU FIMI monitoring, early warning and response, and in close cooperation with DG SANTE, DG HERA and national health authorities.*
4. ***The European Commission should expand DG HERA's role in tackling health mis- and disinformation as part of EU health emergency preparedness and response****, including through monitoring of emerging information threats, coordinated crisis communication and support to Member States when false or manipulated information threatens an effective public health response.*

Section 2. Rethinking EU preparedness and resilience to safeguard cancer care

The previous chapter examined a changing security environment in which armed conflict, cyberattacks, misinformation, disinformation, and geopolitical disruption increasingly threaten cancer care. This chapter turns to the resilience of cancer care itself and to a fundamental question for European health policy: can essential cancer services continue when health systems come under severe pressure?

Section 2, 'Rethinking EU preparedness and resilience to safeguard cancer care' sets out priorities for strengthening that resilience before the next crisis.

Drawing first on the lessons of COVID-19, it looks at how Europe can strengthen pandemic preparedness by recognising cancer care as an essential service whose continuity must be protected during future health emergencies. Closely linked to this is the need to strengthen the resilience of Europe's oncology workforce, highlighting the need for sustained European action to ensure that healthcare professionals can continue delivering essential cancer services when health systems come under pressure.

Moving beyond pandemic preparedness, attention turns to the growing threat antimicrobial resistance (AMR) poses to the safe and effective delivery of cancer treatment across Europe, identifying priorities for a stronger, more coordinated European response.

Finally, section 2 makes the case for building more resilient cancer medicine supply chains, highlighting how geopolitical tensions and strategic dependencies threaten access to essential medicines and setting out priorities for securing supply.



2.1. Lessons from COVID-19: from protecting cancer care as an essential service to strengthening Europe's oncology workforce

COVID-19 and its impact on cancer care across Europe:

Key findings from the European Cancer Organisation's **Time to Act report**

1. Disruption to cancer care

The pandemic caused major disruptions across the cancer pathway, from screening and diagnosis to treatment. According to the European Cancer Organisation's Time to Act analysis, clinicians across Europe saw an estimated 1.5 million fewer cancer patients during the first year of the pandemic, while 100 million screening tests were not performed and up to 1 million cancer patients may have gone undiagnosed. Delays in referrals, diagnosis and treatment resulted in substantial backlogs, putting patient outcomes at risk.[83]

2. Impact on the oncology workforce

The COVID-19 pandemic placed unprecedented pressure on an already stretched y workforce, exacerbating existing challenges related to staffing, working conditions and professional wellbeing. ECO's analysis highlighted the considerable psychological toll of the pandemic, drawing on evidence that 4 in 10 healthcare workers experienced burnout, while 3 in 10 showed signs of clinical depression. These findings exposed the vulnerability of the cancer workforce and the importance of strengthening its resilience to sustain essential cancer services during future crises.[84]

The findings of the European Cancer Organisation's Time to Act report illustrate how COVID-19 exposed vulnerabilities in Europe's ability to maintain cancer care during a major health emergency. Beyond the immediate disruptions, the pandemic demonstrated that the continuity of cancer care cannot depend on measures introduced only once health systems come under pressure. Resilience must be built before the next crisis occurs.

Two closely connected priorities emerge from this experience.

First, cancer care must be recognised and protected as an essential service within European and national health emergency preparedness and response planning. Equally important is strengthening the resilience of Europe's oncology workforce, ensuring that healthcare professionals have the capacity and support to maintain essential cancer services even under the most challenging circumstances. Together, these lessons provide the foundation for the following priorities for EU actions.

A. Recognising cancer care as an essential service

COVID-19 provided a stark warning. Across Europe, cancer screening, diagnosis and treatment were disrupted, while already stretched healthcare professionals faced unprecedented pressure. The pandemic showed that cancer care cannot simply be put on hold during a crisis and that resilience cannot be built once an emergency has already begun. It requires recognising cancer care as an essential service and ensuring that the workforce and capacity needed to sustain it are in place beforehand.

I. The impact of COVID-19 on the continuity of cancer care across Europe

During COVID-19, the impact of the pandemic on cancer care became starkly apparent. WHO Europe reported disruptions of between 5% and 50% across cancer screening and treatment.[85] In Belgium, diagnoses of invasive tumours fell by 44%, while colorectal cancer screening in Italy declined by 46%.[86] These national examples reflect a wider European trend. As shown in the figure below, a WHO survey found that 34% of responding countries in the WHO European Region reported disruptions to cancer care between February and August 2020:[87]

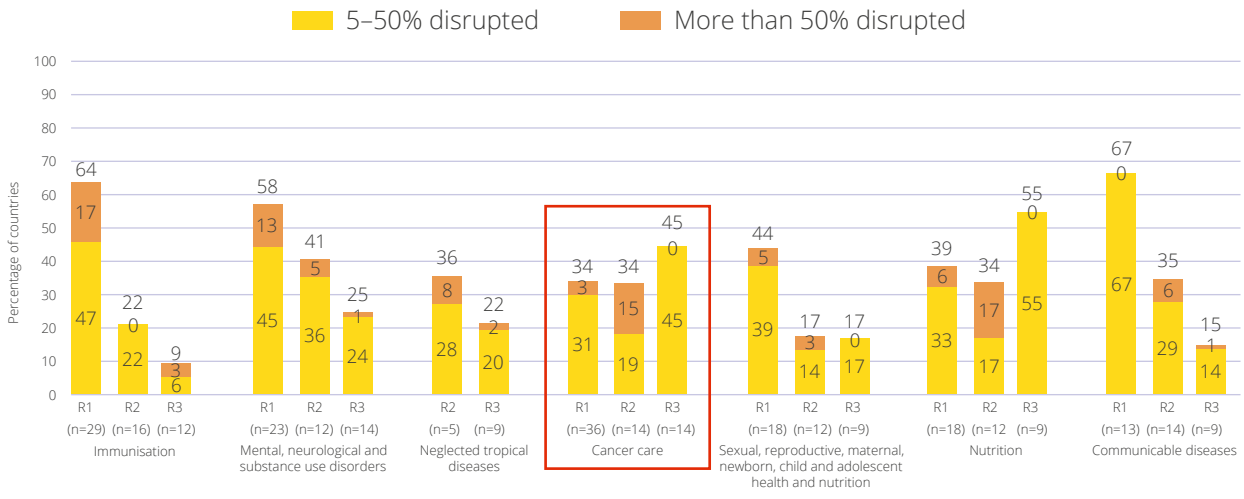
The scale of COVID-19-related disruption to cancer care was also reflected in data published in 2021 as part of the European Cancer Organisation's *Time to Act report.* It was estimated that around one million cancer cases had gone undiagnosed across Europe, while approximately 100 million cancer screening tests had not been performed during the pandemic. Up to one in two people with potential cancer symptoms were not urgently referred for diagnosis, while more than a year into the pandemic, one in five cancer patients was still not receiving the surgery or chemotherapy they needed.[88]

For cancer patients, the consequences of such disruption can be profound. Early detection, timely diagnosis and uninterrupted access to effective treatment are critical to patient outcomes, meaning that delays at any stage of the cancer pathway can affect survival and quality of life. These figures therefore underline why continuity of cancer care must be treated as a core component of health emergency preparedness.

II. Translating the lessons into stronger preparedness

COVID-19 changed the way Europe thinks about health emergency preparedness. The objective can no longer be limited to controlling the immediate health threat. Health systems must also be able

Disruption of cancer care and nutrition services increased in 2021, but declined for other services. Extent of service disruptions (% of users not served as compared to pre-pandemic levels) in Round 1, Round 2 and Round 3



Source: World Health Organization. Regional Office for Europe

to keep essential care running while responding to it. WHO Europe has formalised this principle in its Preparedness 2.0 Strategy, which calls for a 'dual-track' approach combining emergency response with the maintenance of essential services.[89]

The EU has moved in the same direction. Following COVID-19, the EU adopted a new framework for dealing with serious cross-border health threats, strengthening common preparedness planning, surveillance, coordination, and the assessment of national readiness. Crucially, this framework recognises that preparedness must also consider the impact of a health emergency on the continuity of healthcare for other diseases and conditions, while the Union Civil Protection Mechanism and Union support for health emergency preparedness and response, provide an operational toolbox through which the Commission, Member States and EU agencies can coordinate this preparedness.

The next step is to ensure that the general commitment to maintaining essential healthcare is translated into concrete preparedness for cancer care. The experience of COVID-19 points to three priorities: protecting continuity across the cancer pathway, detecting disruption early, and ensuring that health systems can rapidly address the backlogs that arise when care is interrupted.

Priority 1: Embed continuity of cancer care in EU preparedness and response planning

Cancer care should be explicitly reflected in EU and national preparedness and response planning as part of the essential health services that must be maintained during a health emergency. This should cover continuity across the cancer pathway, from screening and diagnosis to treatment, access to medicines, supportive care, and follow-up.

At the EU level, the Commission and Member States should develop cancer-specific continuity guidance within the Union's prevention, preparedness and response plan, drawing on the Health Security Committee and input from the cancer community encompassing healthcare professionals, scientific and professional societies, researchers, cancer centres, patient organisations and other stakeholders involved in cancer prevention, treatment and care. This should set out how continuity of cancer pathways, diagnostics, medicines, and treatment capacity can be maintained when normal service delivery is disrupted.

National preparedness plans should then translate this into operational arrangements at health-system and hospital level, including business continuity plans and response protocols for cancer services.

Best practice 1: Cancer Australia's Conceptual Framework for Cancer Care during a Pandemic[90]

Cancer Australia (Australian Government's national cancer control agency) developed a Conceptual Framework for Cancer Care During a Pandemic to support policymakers, health services and cancer organisations in planning how cancer care can continue when health-system capacity comes under pressure.

The framework links cancer service delivery to different phases of a pandemic and changing levels of system capacity, providing a ***practical example of how cancer-specific continuity arrangements can be built into preparedness before disruption occurs*** *(see Annex).*

Best practice 2: UK's 2026–2030 Pandemic Preparedness Strategy[91]

The UK Government's Pandemic Preparedness Strategy 2026–2030 explicitly identifies time-sensitive cancer screening as a service that must be protected during a future pandemic. It commits the Department of Health and Social Care and NHS England to work with NHS commissioners, providers and local health systems to plan how screening can be maintained, including for people at higher risk of breast, bowel and lung cancer, taking account of clinical prioritisation and available capacity.

This shows how cancer-related services can be built into preparedness planning, *with continuity arrangements considered before health-system capacity comes under pressure:*

e) Improve capabilities to maintain NHS screening services in a future pandemic
DHSC and NHS England will work with NHS commissioners and providers to ensure time-sensitive screening services can be maintained during a pandemic. This will include:

- screening services for those at higher risk of cancer, particularly breast, bowel and lung cancers

Priority 2: Monitor and adapt cancer services during health emergencies

COVID-19 showed that disruption can become substantial before its full scale is visible. In Belgium alone, around 5,000 fewer cancer diagnoses were recorded over seven months. Lower screening and diagnostic activity can also lead to later-stage diagnoses, when treatment is often more complex and costly.[92]

EU preparedness should therefore enable health systems to detect disruption early and adapt service delivery as pressures emerge. The European Cancer Information System, national cancer registries and more timely service data could support common indicators across screening, diagnosis, and treatment.

Monitoring should be linked to pre-agreed adaptation measures, including prioritising time-sensitive care and using alternative models such as virtual consultations and remote follow-up where clinically appropriate.

Best practice 3: Ontario Health's framework for virtual cancer care (Canada)[93]

During COVID-19, Ontario rapidly expanded virtual cancer care to maintain access while in-person services were constrained. By May 2020, virtual new-patient consultations had risen to 46.5% for systemic treatment and 58.1% for radiation treatment, compared with just 0.3% and 1.4% respectively a year earlier.[94]

'Ontario Health' subsequently developed ***clinical guidance for person-centred virtual cancer care****, covering when and how virtual consultations should be used. This shows how alternative models of care introduced during a crisis can be translated into pre-agreed approaches for maintaining cancer services during future disruptions.*[95]



Priority 3: Ensure rapid recovery of cancer services after disruption

Continuity cannot always be fully protected during a major crisis. Preparedness must therefore also anticipate how cancer services will recover when disruption occurs. Across EU countries with available data, cancer-related hospital stays fell by an average of 11.5% in 2020, and the European Commission's Joint Research Centre (JRC) found that in some countries screening and treatment activity had still not fully recovered in 2021.[96]

EU and national preparedness plans should therefore include recovery arrangements for cancer services, setting out how screening, diagnostic and treatment capacity can be restored rapidly, how accumulated delays will be identified and addressed, and how patients most at risk from further delay will be prioritised.

Recovery should be planned before an emergency occurs, rather than left to health systems to manage once substantial backlogs have already developed.

Building on the lessons of COVID-19, the following actions should be taken to strengthen the resilience of cancer care in future health emergencies:

1. ***Cancer-specific continuity guidance should be integrated into future updates of the European Union's prevention, preparedness and response plan for health crises, as well as into the implementation of the EU Preparedness Union Strategy.*** *This guidance should set out concrete measures to maintain and restore cancer services when health systems face disruption.*
2. ***EU and national preparedness monitoring should include indicators to track disruptions to cancer screening, diagnosis and treatment.*** *Drawing on data from national cancer registries and the European Cancer Information System, these indicators should help identify emerging disruptions early and prevent avoidable delays in care.*
3. ***Preparedness exercises and stress tests at EU, national and regional levels should assess the ability of cancer services to maintain continuity of care during crises.*** *These exercises should include scenarios involving workforce shortages, disruptions to diagnosis and treatment and the need for patient transfers.*

B. Strengthening the resilience of Europe's oncology workforce

The COVID-19 pandemic demonstrated that workforce capacity is not simply a staffing issue but a prerequisite for resilient cancer care.[97] Yet, the underlying workforce shortages exposed during the pandemic remain unresolved while increasing cancer incidence due to population ageing is set to place further pressure on cancer services dr. Without a sufficiently staffed and supported cancer workforce, Europe's ability to provide timely and high-quality cancer care and maintain that care during future crises will remain vulnerable.

his section looks at the growing pressures on the workforce and their impact on care, before turning to the policy action needed to build a workforce better equipped to withstand future crises.

I. A cancer workforce under pressure

Europe's ability to meet its growing cancer burden will depend not only on advances in prevention, diagnosis and treatment but also on having the workforce capacity to deliver them. This capacity is increasingly under pressure. By 2040, Europe's population aged 65 and over is projected to increase by 27%.[98] With cancer risk increasing significantly with age, this ageing population will contribute to a projected 18% increase in new cancer diagnoses by 2040.[99] At the same time, Europe is projected to face a shortage of 4.1 million healthcare workers by 2030 if no further action is taken.[100]

Europe therefore faces a widening gap between the cancer care its citizens will require and the workforce available to provide it. Persistent shortages place greater pressure on an already stretched cancer workforce, increasing workloads and risks to staff wellbeing and retention. For patients, insufficient workforce capacity can contribute to poor quality of care, longer waiting times, and delays in diagnosis and treatment.

Increasing pressure on cancer care professionals

The growing pressures on Europe's cancer workforce extend beyond shortages in staff numbers. They are also changing the conditions under which cancer professionals are expected to deliver care. As fewer professionals face growing demand for cancer services, maintaining sufficient workforce capacity depends on the ability to support and retain those already working in cancer care.

The European Cancer Organisation's 2024 report *"Under Pressure: Safeguarding the Health of Europe's Oncology Workforce"* provides an important insight into these pressures. Based on responses from more than 700 cancer professionals, the report identified excessive workload, administrative burden, and overtime among the recurrent pressures: 77% reported often needing to work overtime, while 55% said that administrative procedures and rules make their job difficult.[101]

The toll is significant. 19% reported high levels of burnout, while 43% indicated that their work often left them little time for personal life.[102] With fewer professionals expected to meet growing demand for cancer care, sustained workloads and burnout risk making an already difficult retention challenge even harder.

Consequences for patients and continuity of care

These pressures extend beyond the mental health, wellbeing and personal lives of cancer professionals. They also impact patients and the continuity of their care. Insufficient staffing can reduce the capacity of cancer services to meet demand, contributing to longer wait times, treatment delays and, ultimately, putting the quality and safety of care under pressure.

COVID-19 exposed how insufficient workforce capacity can disrupt care, and recent findings suggest that this vulnerability has still not disappeared. A 2025 analysis of the European Cancer Nursing Index, including data from 436 cancer nurses across 29 European countries, found that 18% reported bed closures and cancer treatment delays due to nursing shortages.[103] More strikingly, each additional patient per nurse was associated with a 9% increase in the likelihood of reporting cancer treatment delays, illustrating how workforce shortages can translate directly into reduced capacity to provide timely cancer care.[104]

For patients, the implications can be significant. Cancer care depends on timely diagnosis, treatment and follow-up, often delivered by highly specialised and multidisciplinary teams. When insufficient workforce capacity results in delayed diagnoses and treatments, workforce shortages cease to be merely a staffing challenge and become a direct barrier of timely care.

II. Building a resilient cancer workforce

Ensuring sufficient workforce capacity is critical not only for meeting Europe's growing cancer burden, but for protecting the timeliness, quality and continuity of care during future crises. As demand continues to grow, Europe's ability to translate advances in cancer prevention, diagnosis, and treatment into better outcomes for patients will ultimately depend on having enough professionals to deliver them.

Political recognition of the challenge is growing. In September 2026, the European Parliament adopted its own report, *An EU health workforce crisis plan: sustainability of healthcare systems and employment and working conditions in the healthcare sector (2025/2062(INI))*, calling for stronger action to address workforce shortages, improve working conditions, and strengthen workforce planning.[105] This represents an important step forward. However, as a non-binding report, its recommendations must now be matched by action from the European Commission and Member States.



Priority 1: Anticipate shortages before they become a crisis

Recognition must now become action. COVID-19 demonstrated the consequences of entering a crisis with healthcare systems already short-staffed. Yet Europe still lacks a sufficiently coordinated approach to identify where critical shortages are emerging and when insufficient staffing begins to threaten essential cancer services.

The EU already applies this logic to other health system vulnerabilities. The European Health Emergency Preparedness and Response Authority (HERA) assesses threats to the supply of critical medical countermeasures, helping Europe anticipate which medicines, vaccines and other medical supplies may be needed during a health emergency.[106] Yet, when it comes to the workforce needed to keep essential health services running, no comparable preparedness mechanism exists. The same approach should be applied to the health workforce. HERA should be given a mandate for health workforce mapping, helping to identify critical shortages, including of specialised cancer professionals, before they threaten continuity of care.[107]

This should be paired with EU standards for hospital staffing, setting out the workforce capacity needed to maintain safe and continuous cancer services. France is already moving in this direction, with a 2025 law introducing minimum numbers of healthcare professionals per hospitalised patient and recognising sufficient staffing as a prerequisite for safe care.[108]

Priority 2: Invest in and expand the cancer workforce

Anticipating shortages must be matched by investment to close them. As demand for cancer care grows, Europe and its Member States will need to invest more in training, recruiting and expanding the cancer workforce.

The case for doing so goes beyond health. The Global Cancer Workforce microsimulation model estimates that every $1 invested in addressing shortages could generate $4 in economic returns, with global benefits of up to $120 trillion between 2030 and 2050.[109] Investing in the workforce is not just more health spending; it buys better outcomes, more resilient health systems and stronger economies.

Some EU Member States are already putting this principle into practice. In 2024, Ireland announced €41 million in additional cancer funding, including investment to recruit 179 additional staff for national cancer screening and treatment services. It demonstrates a principle that should guide cancer policy across Europe.[110] New ambitions for cancer care must come with investment in the workforce needed to deliver them.

To address the longstanding challenges facing Europe's oncology workforce, the following priorities are proposed:

1. ***The European Commission should develop an EU Action Plan to address oncology and wider healthcare workforce shortages.*** *Building on the European Parliament's resolution on an EU health workforce crisis plan, the Action Plan should establish concrete measures and timelines for workforce planning, recruitment, retention and improving working conditions across cancer professions.*
2. ***Health workforce preparedness should be strengthened within DG HERA's mandate.*** *This should include systematic mapping of critical workforce shortages and vulnerabilities, particularly in specialised cancer professions, to identify where insufficient capacity could jeopardise the delivery of essential cancer services.*
3. ***The EU should develop standards and benchmarks for workforce capacity and safe staffing levels.*** *These standards should support Member States and cancer centres in assessing workforce needs, monitoring staffing levels and ensuring adequate staffing across cancer services.*
4. ***Existing EU mechanisms for cross-border medical assistance should be strengthened to address critical healthcare workforce shortages.*** *Building on the European Medical Corps and a rescEU-style approach, these mechanisms should facilitate the temporary mobilisation of specialised healthcare professionals when national capacity is insufficient.*

2.2. Antimicrobial resistance (AMR) – resilient cancer care at risk

As antimicrobial resistance (AMR) rises across Europe, infections grow harder to treat, threatening the effectiveness of essential cancer treatments and putting already vulnerable patients at greater risk.

Recognising AMR as a growing challenge for health system preparedness and resilience, this section examines its growing burden across Europe, its consequences for cancer care, and the action needed.

Antimicrobial resistance (AMR) and its impact on cancer care

What is AMR?

According to the WHO: 'Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites do not respond to antimicrobial medicines,[111] making infections increasingly difficult to treat.'

Why does AMR threaten the resilience of cancer care?

WHO Europe is explicit: 'Without effective antibiotics, other medical procedures and treatments, such as surgeries and cancer chemotherapy, become much riskier.'[112]



I. The rising threat across Europe

AMR occurs when microorganisms, including bacteria, viruses, fungi and parasites, develop resistance to the medicines used to treat them.[113] The overuse and misuse of antimicrobial medicines in human and animal health are major drivers of this process.[114] As resistance increases, infections that were once readily manageable become harder, and sometimes impossible, to treat, leaving patients with fewer effective treatment options.[115]

As medical interventions such as cancer treatment, surgery and organ transplantation can leave patients particularly vulnerable to infections, growing antimicrobial resistance poses a serious threat to their safe delivery.[116] This is particularly concerning for cancer care, where infections are the second leading cause of death among people with cancer, after cancer itself.[117]

The growing health and economic burden of AMR

With around one in five bacterial infections in Europe already resistant to antibiotics and more than 35,000 people dying each year as a direct result,120 AMR is placing a growing burden on health systems.

Yet Europe is falling behind in its efforts to tackle AMR effectively. Between 2019 and 2023, antibiotic consumption in the EU increased by 1%, moving the EU further away from its agreed target of reducing human antibiotic consumption by 20% by 2030.[118] At the same time, rising resistance to last-line antibiotics and the spread of drug-resistant fungi, are posing growing challenges to the treatment of serious infections, particularly among vulnerable patients, including those with cancer.[119]

The consequences extend beyond the growing human toll. According to WHO, AMR already costs European economies an estimated €11.7 billion every year through increased healthcare expenditure and workforce productivity losses.[120]

The implications are particularly acute for cancer care, where patients are especially vulnerable to infection and the consequences of growing resistance.

AMR threatens the safe and effective delivery of cancer care

Many cancer treatments, including chemotherapy, radiotherapy, surgery and stem cell transplantation, weaken a patient's immune defences and raise the risk of infection. It is estimated that 1 in 5 patients undergoing cancer treatment will need antibiotics.[121] This vulnerability is compounded by AMR, with rates of resistant infections up to three times higher among cancer patients than among people without cancer.[122] Furthermore, higher mortality rates were associated with AMR infections.[123, 124]

For cancer patients, the consequences are particularly severe. According to *Cancer Patients Europe (CPE)*, infections contribute to around 50% of deaths among cancer patients.[125] In a European study published in *BMJ Open* assessing the impact of AMR on cancer patients with bloodstream infections, AMR was responsible for an estimated 6.3% of deaths.[126]

Furthermore, drug-resistant infections have severe and lasting consequences for cancer patients and their families, including sepsis, delayed or interrupted cancer treatment, prolonged hospitalisation, long-term complications and considerable psychological and financial strain.[127]

Then there's the economic impact. A recent preliminary analysis assessing the economic impact of drug-resistant infections on cancer care estimated that a single drug-resistant infection could result in up to $29,000 in additional hospital costs, $33,000 in lost cancer treatment value and $177,000 in lost health value. [128] Conversely, the analysis projected that investments in infection prevention and control, antimicrobial stewardship and new antimicrobials could together preserve $7.4 billion in health value by 2050.[129]

These findings underline how tackling AMR is not only a clinical imperative but also a strategic investment to protect and maximise the benefits of existing cancer expenditure.[130]

II. Strengthening Europe's AMR response

AMR has driven political action at both global and European levels. In 2024, world leaders at the United Nations General Assembly committed to reduce deaths associated with bacterial AMR by 10% by 2030.[131] At EU level, the 2017 "*EU One Health Action Plan against AMR*" and the 2023 *Council Recommendation on stepping up EU actions to combat AMR in a One Health approach* have established a framework for stronger prevention, surveillance, responsible antimicrobial use, awareness and research.

However, cancer and AMR policies still too often operate in parallel, while measures to reduce antimicrobial use remain uneven across sectors and Member States. Protecting cancer care against AMR therefore requires closer integration between cancer and AMR policies, alongside stronger accountability across all sectors contributing to the development and spread of resistance.

Priority 1: Break the silos between cancer and AMR policies

The European Parliament already recognised this gap in its 2023 resolution on AMR, calling for AMR to be addressed in national cancer plans.[132] Yet a global review of 98 National Cancer Control Plans found that only two (Turkey and Zambia) referred to AMR-related strategies, with none from an EU Member State.[133]

The need for greater integration also extends to the delivery of cancer care. While patients and healthcare professionals both play a crucial role in infection prevention, only 41% of surveyed cancer patients understood how preventive measures can help reduce the risk of antibiotic resistance.[134] Similarly, while 72% of surveyed medical oncologists recognised AMR as a significant issue for cancer patients, only 48% reported having an active antimicrobial stewardship programme in their centre.[135]

Integrate AMR into cancer plans and clinical guidance

Europe must now connect its AMR and cancer agendas. National Cancer Control Plans should systematically address AMR, while AMR action plans should recognise cancer patients as a particularly vulnerable population and respond to the specific needs of cancer services.

At EU level, existing AMR commitments should be translated into cancer-specific standards and guidance for preventing and managing infections across cancer care, including access to appropriate and rapid diagnostics to inform treatment decisions and strengthen AMR surveillance, supported by clear indicators to monitor implementation.

Involve patients and cancer professionals in tackling AMR

Patients, healthcare professionals and experts in infection prevention and antimicrobial stewardship should be actively involved in developing and implementing cancer-specific AMR strategies and guidelines, as well as shaping relevant research priorities.[136]

Beyond policymaking, patients should actively participate in infection prevention and shared decision-making on antimicrobial treatment, with access to clear information tailored to different levels of health literacy. At the same time, AMR, infection prevention and appropriate antimicrobial use should be integrated into the education and continuing professional development of cancer professionals. [137]

Priority 2: Turn One Health commitments into cross-sector accountability

Addressing AMR cannot be left to the health sector alone. Several sectors beyond human healthcare, including agriculture and animal health, contribute to the development and spread of antimicrobial resistance.[138] Yet measures to reduce antimicrobial use and accountability for progress remain uneven across sectors, highlighting the need for stronger and more coordinated action under the One Health approach.

The Netherlands shows how stronger cross-sector accountability can make a difference. Antibiotic use on farms and prescribing by veterinarians are systematically monitored and benchmarked, allowing excessive use to be identified and addressed.[139] Together with government oversight and measures in the agricultural sector, this contributed to a 77.4% reduction in antibiotic use in farm animals between 2009 and 2022.[140]

Strengthen accountability for antimicrobial use beyond the healthcare sector

The EU is now putting the foundations for similar action in place, with Member States required since 2024 to report antimicrobial sales and use in animals. Yet the extent to which these data are translated into concrete action still varies considerably across Europe.[141]

National authorities should therefore use antimicrobial-use monitoring to set sector-specific targets, benchmark progress and take targeted action where use remains excessive. This should be accompanied by clear responsibilities and regular assessments of progress to ensure accountability across the different sectors contributing to AMR.

To safeguard a resilient cancer care from the growing threat of antimicrobial resistance:

1. ***The European Commission should support Member States in ensuring that AMR is addressed in National Cancer Control Plans and that national AMR action plans reflect the specific risks facing cancer patients and services****, including through stronger infection prevention and control and antimicrobial stewardship.*
2. ***The European Commission, together with ECDC, should develop cancer-specific guidance, standards and indicators for AMR in cancer care****, These should cover infection prevention and control, antimicrobial stewardship and use, guidelines for managing infections and procedures for their regular review and update, surveillance of resistant infections, improved access to rapid and reliable diagnostics, strengthened laboratory capacity and appropriate vaccination strategies for cancer patients and caregivers.*[142]
3. ***The EU and Member States should translate One Health commitments into measurable action across sectors****, using targets, surveillance, and benchmarking to reduce antimicrobial use in agriculture and animal health and limit antimicrobial pollution from pharmaceutical manufacturing and other sources.*
4. ***The EU and Member States should strengthen the involvement of cancer professionals, patients and patient organisations in addressing AMR in cancer care,*** *ensuring that oncology professionals are trained in antimicrobial stewardship (AMS), and infection prevention and control (IPC), while promoting patient involvement in AMR policymaking, shared decision-making on antimicrobial treatment and access to information tailored to different levels of health literacy.*
5. ***Governments should explore new incentives for antimicrobial innovation along with diagnostics, while ensuring sustainable and equitable access and optimal use of both new and existing antibiotics.*** *These could include an 'AMR designation' analogous to orphan drug status, push and pull incentives, subscription models and advance purchase agreements, linked to clear access and availability requirements. Measures should also address shortages of essential antibiotics and antifungals, particularly older first-line treatments, to avoid unnecessary reliance on reserve antibiotics.*[143]



2.3. Building resilient cancer medicine supply chains in Europe

> **We will propose a Critical Medicines Act to reduce dependencies relating to critical medicines and ingredients, particularly for products where there are only a few supplying manufacturers or countries.**
> Ursula von der Leyen, President of the European Commission; Europe's Choice – Political Guidelines for the Next European Commission 2024–2029, 18 July 2024

In February 2026, the European Medicines Agency (EMA) reported that shortages of ifosfamide and cyclophosphamide, two long-established and essential cancer medicines, were affecting countries across Europe and were expected to last until the first quarter of 2027.[144] The cause was neither armed conflict nor a cyberattack. Manufacturing problems at a single site used by a major European supplier were sufficient to disrupt supply across the EU.

This illustrates another dimension of cancer security. Vulnerabilities in pharmaceutical supply chains can equally undermine continuity of cancer care. Nearly 70% of European countries have reported shortages affecting medicines used in cancer treatment,[145] while one in five medicines identified by the EU as critical is used to treat cancer.[146] For cancer care, medicine shortages can lead to delayed or interrupted treatment, the use of less suitable or more expensive alternatives, increased risks of medication errors or adverse events, and can even impact patients' survival rates.[147]



I. Critical vulnerabilities in supply

With 64 cancer medicines classified as critical at EU-level, ensuring reliable access is essential for continuity of cancer care.[148] Recent shortages show that vulnerabilities can arise at different points in the supply chain: from dependence on third EU- and Non-EU countries for active pharmaceutical ingredients at the earliest stages of production, to reliance on too few manufacturers and production sites for finished medicines within Europe itself.

Two vulnerabilities therefore stand out: dependence on third countries for critical pharmaceutical inputs and excessive concentration of critical medicine supply. These vulnerabilities are compounded by economic pressures, with shortages disproportionately affecting older, low-cost generic cancer medicines.[149]

Challenge 1: Dependence on third countries for active pharmaceutical ingredients

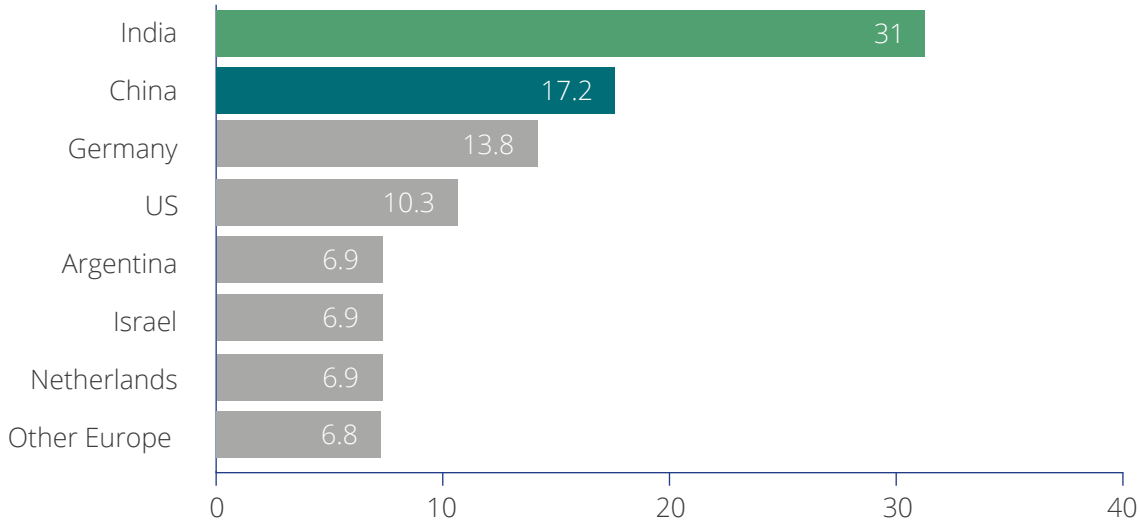
A first challenge lies at the beginning of the pharmaceutical supply chain, where the EU remains heavily dependent on third countries for so-called active pharmaceutical ingredients (APIs). Approximately 75% of API production sites are located outside the EU, notably in India and China.[150] This dependency is even more striking considering that, for approximately 21% of the APIs analysed by the European Commission, there was no production within the EU at all.[151]

The same pattern emerges for APIs for oncology medicines. A recent World Bank analysis found that India and China together account for almost half of Europe's quality certificates for key oncology APIs (48%).[152] This concentration poses a growing risk: disruption at the API stage – from geopolitical and trade issues – can quickly impact the availability of cancer medicines.

Challenge 2: Lack of diversification in critical medicine supply

A European Commission analysis found that, for every critical medicine examined, more than 30% of supply depended on a single country or manufacturer.[153] Such concentration is dangerous: one manufacturing problem or other supply shock can quickly affect medicine availability where alternatives are limited or unavailable.

Share of Valid Certificates of Suitability (%)
Key oncology APIs



Sources: EDQM Certificate Database, February 2024; Johnston and Borrett 2024.

Note: The Certificate of Suitability certifies compliance of the Active Pharmaceutical Ingredients or pharmaceutical ingredients with the rules defined in the monograph of the European Pharmacopoeia. Oncology APIs for carboplatin, methotrexate, and cisplatin. API = Active Pharmaceutical Ingredient.

For cancer care, ifosfamide provides a clear example of the risks posed by insufficient diversification. This chemotherapeutic drug, used to treat cancers such as sarcoma, lymphoma, testicular, lung, and ovarian cancer, is supplied almost entirely by one company, which accounts for nearly 100% of the EU market. When manufacturing problems disrupted production in 2026, most Member States had no alternative ifosfamide-containing medicine available, with potentially severe consequences for the continuity of treatment for cancer patients across Europe.[154]

II. Strengthening Europe's response

Security of medicine supplies is increasingly treated as a matter of strategic autonomy at both EU and national level. Spain's *Pharmaceutical Industry Strategy 2024–2028*, for example, identifies strengthening Spain's strategic autonomy through a resilient pharmaceutical supply chain as a central pillar.[155] The same is true at EU level with the reform of EU pharmaceutical legislation, the Medical Countermeasures Strategy and more recently, the Critical Medicines Act, placing greater emphasis on security of medicine supply and strategic autonomy.

The Critical Medicines Act introduces measures that directly address some of the vulnerabilities identified above by:

1. **Strengthening manufacturing capacity in the EU** by facilitating investment in the production of critical medicines, their active pharmaceutical ingredients and other key inputs[156]
2. **Diversifying and strengthening supply chains** by including supply resilience and diversification criteria in public procurement procedures and facilitating strategic partnerships with third countries[157]

For cancer care, the challenge now is to ensure that this emerging framework translates into greater resilience of supply for critical cancer medicines. The cancer community can help. Existing initiatives demonstrate how cancer-specific expertise can pinpoint the medicines where security of supply matters most:

Best practice 1: French National Cancer Institute (INCa)

In France, a working group led by the Institut National du Cancer (INCa), together with clinical experts and scientific societies, identified 43 cancer medicines whose unavailability would pose a serious, immediate risk to patients. These were then added to France's national list of essential medicines, with the French medicines agency (ANSM).[158]

Best practice 2: European Society for Paediatric Oncology (SIOP Europe)

Through its Essential Anticancer Medicines Project, SIOP Europe identified 66 medicines essential for treating children and adolescents with cancer, from a systematic review of European treatment protocols and expert assessments.[153] *The list gives policymakers and healthcare providers a reference to address medicine shortages, improve access to essential treatments and safeguard childhood cancer care across Europe.*

To strengthen the resilience of cancer medicine supply in Europe, the European Cancer Organisation recommends:

1. ***EU-level monitoring and coordination of shortages affecting critical cancer medicines should be reinforced,*** *building on the existing EMA framework and closer cooperation with pharmaceutical manufacturers and distributors to enable earlier identification of supply risks, better visibility of available stocks, and coordinated action before shortages disrupt cancer treatment.*
2. ***The European Commission should support Member States in reducing vulnerabilities and excessive concentration in critical cancer medicine supply chains,*** *including by promoting and facilitating diversified suppliers and production capacity through Strategic Projects and resilience requirements in public procurement under the Critical Medicines Act.*
3. ***The European Commission should support Member States in coordinating strategic stockpiles of critical cancer medicines through EU guidance and common standards,*** *including criteria for identifying medicines requiring contingency stocks, appropriate stock levels and arrangements for sharing and rapidly redistributing stock when shortages occur.*



Conclusion

The evidence and recommendations presented in this paper provide a clear basis for collective action at European and national level. Safeguarding cancer care against the threats posed by Europe's changing security landscape requires breaking down traditional policy silos, bringing together decisionmakers from health, defence and other policy areas, alongside healthcare professionals, cancer organisations and patient representatives. Protecting cancer care can no longer be considered a responsibility of health policy alone.

Europe is not starting from scratch. *United Nations' Security Council Resolution 2286* already calls for the protection of healthcare facilities and medical personnel during armed conflict. The EU's Temporary Protection Directive provides a framework for access to healthcare for displaced people, while the *European Action Plan on the Cybersecurity of Hospitals and Healthcare Providers* sets out measures to strengthen the protection of essential healthcare services against cyberattacks. Likewise, the 2024 *Council Recommendation on Vaccine Preventable Cancers* recognises the importance of combating misinformation and disinformation that undermines confidence in vaccination, including against HPV.

The challenge, therefore, is not the absence of policy frameworks, but the political will, courage and perseverance needed to translate them into effective action, ensuring that existing provisions are fully implemented, shortcomings addressed and the specific vulnerabilities of cancer care recognised. Above all, this requires moving beyond fragmented responses to individual threats and ensuring that safeguarding cancer care when armed conflict, geopolitical instability and other security threats put its continuity at risk becomes an integral part of the EU's security agenda.

Yet integrating cancer care into Europe's security agenda alone will not be sufficient if cancer services themselves lack the resilience to withstand future crises. As highlighted throughout this paper, the COVID-19 pandemic exposed the consequences of failing to safeguard the continuity of cancer care in emergency preparedness and response planning, particularly when already overstretched healthcare systems come under additional pressure. Strengthening resilience therefore requires addressing existing vulnerabilities before the next crisis strikes, from persistent healthcare workforce shortages to the growing threat of antimicrobial resistance, while ensuring that the continuity of essential cancer services becomes an integral part of emergency preparedness planning.

The message is clear. Europe cannot afford to repeat the same mistakes. Yet the ongoing negotiations on the EU's long-term budget for 2028–2034 raise serious questions about whether the lessons of past crises are being taken seriously. In the latest proposal, the funding envelope supporting health emergency preparedness was reduced by 35%, making efforts to strengthen the resilience of healthcare systems and cancer services a casualty of political trade-offs aimed at protecting agriculture and cohesion funding.

Europe must now demonstrate that it has learned from past crises by making the resilience of healthcare systems and cancer services a genuine political and financial priority, rather than an ambition that risks being sacrificed when budgetary decisions are made.

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Annex

Principles Underpinning Optimal Cancer Care
Patient-Centered Care, Safe and Quality Care, Multidisciplinary Care, Supportive Care, Care Coordination, Communication, and Research and Clinical Trials

Pandemic phase incorporating changing health system capacity and pandemic progression	Steps of the Cancer Care Continuum						
	Prevention and Early Detection	Presentation, Initial Investigations, and Referral	Diagnosis, Staging, and Treatment Planning	Treatment	Care After Initial Treatment and Recovery	Managing Recurrent, Residual, or Metastatic Disease	End-of-Life Care
Acute phase I Semiurgent setting Few pandemic infection patients and numbers not rapidly escalating, demand within health system capacity	Continue population-based cancer screening with appropriate social distancing[64,83,95]	Continue initial investigations with use of telehealth where possible[a]; encourage community members to present to GP with *reg flag* symptoms of cancer	Prioritize diagnostic procedures for patients with symptoms and test results suspicious for cancer and use telehealth where possible[a,86,91]	Determine if surgery is elective (can be delayed without a predicted negative outcome)[13]; consider modifications to radiotherapy (eg, hypofractionation)[102,103] and to system treatments (eg, oral, shorter regimens)[82,90]	Consider shared follow-up care, using telehealth where possible[a,82,102]; screen patients for distress and provide psychosocial support[90]	Consider modifying treatments for patients with refractory/resistant disease or treatment breaks for patients with low-volume and/or stable metastatic disease[90]	Consider using telehealth[107] and community palliative care service[90] where possible[a]; discuss goals of care and advanced care planning[90,108]
Acute phase II Urgent setting Rapidly escalating numbers of pandemic infection patients, appproaching limits of health system capacity	Consider reduction of routine population-based cancer screening according to resource availability[64,83,91] but for the least possible time during the prolonged acute phases Follow up abnormal screening results in patients already screened, prioritizing those highly suspicious for cancer[91]	Continue initial investigations with the use of telehealth where possible[a]; encourage community members to present to GP with *red flag* symptoms of cancer	Prioritize diagnostic procedures for patients with symptoms and test results suspicious for cancer and use telehealth where possible[a,86,91]	Prioritize surgery patients by urgency[7,91]; consider delay in commencement of radiotherapy unless urgent[91,102]; and modify systemic treatment as feasible (eg, oral or less toxic regimens).[82,84,90,108] Limit patient visitors or support persons in hospitals (except at end of life)	Delay face-to-face follow-up appoinments and use telehealth where possible[a,82]; consider innovative models of care, eg, shared follow-up care with GP; screen patients for distress and provide psychosocial support[90]	Minimize commencement of IV treatment for patients with refractory/resistant disease; consider deferring palliative radiation therapy treatment,[106] except where these are for life-threatening or urgent conditions.[102] Limit patient visitors or support persons in hospitals (except at end of life)	Consider using telehealth[107] and community palliative care service[90] where possible[a]; discuss goals of care and advanced care planning[90,108]
Acute phase III Emergency setting High numbers of pandemic infection patients, health system capacity exceeded	Consider reduction or deferral of routine population-based cancer screening[64,83,91] but for the least possible time during prolonged acute phases Follow up abnormal screening results in patients already screened, prioritizing those highly suspicious for cancer[91]	Appropriately investigate and refer patients with symptoms, with the use of telehealth where possible[a]; encourage community members to present to GP with *red flag* symptoms of cancer	Prioritize diagnostic procedures for patients with test results highly suspicious for cancer and use telehealth where possible[a,86,91]	Prioritize surgery for life-threatening conditions;[7,91] defer or avoid radiotherapy if clinically appropriate and use shortest safe regimens.[91,102,103] Discuss risks and benefits of starting or changing systemic treatment and reach a shared decision.[53,82] Limit patient visitors or support persons in hospitals (except at end of life)	Delay face-to-face follow-up appointments and use telehealth where possible[a,82]; consider innovative models of care, eg, shared follow-up care with GP; screen patients for distress and provide psychosocial support[90]	Minimize commencement of IV treatment for patients with refractory/resistant disease or palliative regimens with a low likelihood of response/benefit; if radiotherapy is needed for symptom control, use the shortest safe form of treatment.[102,107] Limit patient visitors or support persons in hospitals (except at end of life)	Consider ceasing palliative treatments that have minimal chance of substantial benefit; prioritize management of patients with urgent symptomatic need[91,107]; discuss goals of care and advanced care planning[90,108]
Recovery phase Past the peak of pandemic infection with fewer new daily cases, health system capacity not exceeded	Considerations for reintroduction of service should include the local levels of pandemic infection transmission, the local or regional health system capacity, and availability of resources. These considerations may change over time and vary by service type and setting[83,90] Gradually reintroduce the standard of care according to perceived risk, prioritizing patients at high risk (such as those most at risk for complications from delayed care or those with high risk of cancer progression or recurrence) with consideration of each individual patient's risk of exposure to the pandemic infection because of the resumption of care[83,109]						
	Gradually reintroduce of routine population-based cancer screening with consideration of local conditions and resource availability[83,91] Prioritize appointments for participants whose screening appointment was delayed or for high-risk patients[83]	Appropriately investigate and refer patients with symptoms; encourage community members to present to GP with *red flag* symptoms of cancer	Prioritize diagnostic procedures for patients with test results highly suspicious for cancer and use telehealth where possible[a,86,91]	Gradually reintroduce of routine surgery up to capacity limits and prioritize high-risk patients whose surgery was delayed because of the pandemic[91]; continue hypofractionation where appropriate[7,106]; commence or restart as appropriate, adjuvant treatment that was deferred or interrupted	Prioritize follow-up appointments (as well as any hospital imaging and/or blood tests) for high-risk patients and patients whose appointments were delayed during the acute pandemic phases[83]	Gradually reintroduce the standard of care according to perceived risk, prioritizing high-risk patients, depending on the environmental circumstances and each individual patient's risk of exposure to the pandemic infection because of the resumption of care[83,109]	Gradually reintroduce the standard of care according to perceived risk, prioritizing high-risk patients, depending on the environmental circumstances and each individual patient's risk of exposure to the pandemic infection because of the resumption of care[83,109]

Vaccination, if vaccination against pandemic pathogen is available, should be offered to patients with cancer with consideration of any vaccine contraindications, type of cancer, type and timing of treatment, and level of immunocompromise[97-100]

Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC9470141/

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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