

Global Coalition for Radiotherapy

Future Strategy and Business Case

2022



Vision:

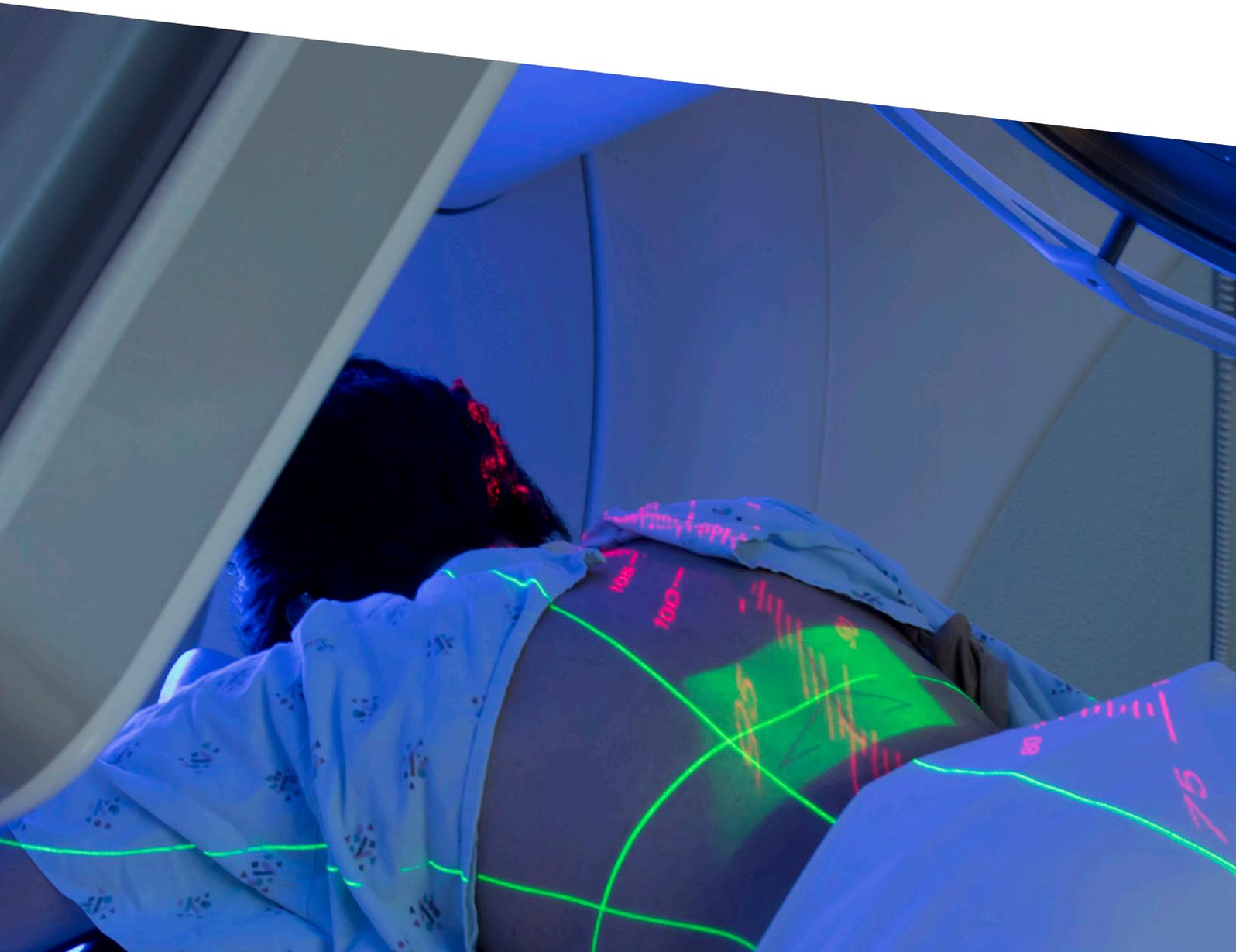
A world where access to quality radiotherapy is universal and equitable.

Mission:

To create a global community and collaborative network of expert stakeholders and leaders in radiotherapy and cancer care to catalyse proactive implementation of innovations, technologies and best practices in radiotherapy, thus saving 1 million lives each year.

Values:

The GCR strives to be innovative, agile, disruptive, collaborative and patient-centric.



Executive Summary

There were 19.3 million new cases of cancer worldwide in 2020 and this is expected to increase to 30.2 million by 2040.¹ Radiotherapy is needed in over 50% of cancer cases and is involved in 40% of cures. Despite this, only 30% of patients receive radiotherapy, 52 countries have less than 20% of the radiotherapy they need, and 38 countries have no access to radiotherapy at all. The Union for International Cancer Control (UICC) Global Task Force on Radiotherapy for Cancer Control (GTRFCC) in their 2015 seminal paper, concluded that **1 million lives would be saved per year** by 2035 through optimal access to radiotherapy, with a net economic benefit of up to US\$365 billion over the 20-year scale-up period.²

The Global Coalition for Radiotherapy (GCR) was formed in April 2020, to understand the challenges and opportunities facing radiotherapy delivery in high-, middle- and low-income countries brought about by the radical disruption of cancer services worldwide, caused by the Covid-19 pandemic. Covid-19 has been the wake-up call to governments; health needs to be given a much higher priority and seen as an investment rather than a cost. There has been a cultural shift and society is demanding that we **Build Forward Better**. Technology and digital developments have opened up a revolution in health care and radiotherapy is at the leading edge of the resulting paradigm shift in cancer care. Innovation and adoption of enabling technologies are essential to accelerate progress.

The GCR aims to improve access to quality radiotherapy by:

- Advocating with a powerful, informed and unified global voice for radiotherapy at a political, policy, industry, scientific, patient and national cancer plan level
- Facilitating identification, analysis and introduction of disruptive strategies to make the next generation advances in radiotherapy using modern technology, digital and cloud-based solutions, AI, big data, multidisciplinary combinations and implementation science
- Connecting the radiotherapy and wider cancer community with new technology, innovations and scientific/policy partners and networks to share knowledge and global solutions in training, workforce, quality assurance, value-based care and health-economic assessments

To do this the GCR will:

- Hold round table networking meetings to provide advice and information, stimulate interactions, develop project-based solutions, help source funding and deliver new forums for collaborative partnerships
- Provide accessible global communication via a supported website and social media platforms
- Act as a hub and spoke for internal and external stakeholders to develop and support networking, speak for the radiotherapy community in a range of forums, and route inquiries, contacts and solutions to the right experts
- Expand the stakeholder groups to develop interactions beyond the current radiotherapy community

In the coming year, the GCR plans to take the coalition to the next level by:

- Developing the administrative, organisational and communication strategy of the GCR
- Selecting and initiating several pilot collaborations/delivery projects which will have global impact
- Developing a comprehensive five-year business case for subsequent expansion of the GCR

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Background

There is currently a lack of radiotherapy provision around the world. Access to high quality radiotherapy is unequal and is the major challenge for radiotherapy worldwide.

The global cancer burden

Cancer is a major and growing healthcare challenge worldwide and remains a high priority. There were 19.3 million new cases of cancer worldwide in 2020 and this is expected to increase to 30.2 million by 2040.¹ Cancer kills more globally than HIV/AIDS, malaria and tuberculosis (TB) combined. The most frequently diagnosed cancer is lung cancer (11.6% of all cases), followed by breast (11.6%) and colorectal cancers (10.2%). Lung cancer is the leading cause of death from cancer (18.4% of all deaths), followed by colorectal (9.2%) and stomach cancers (8.2%).

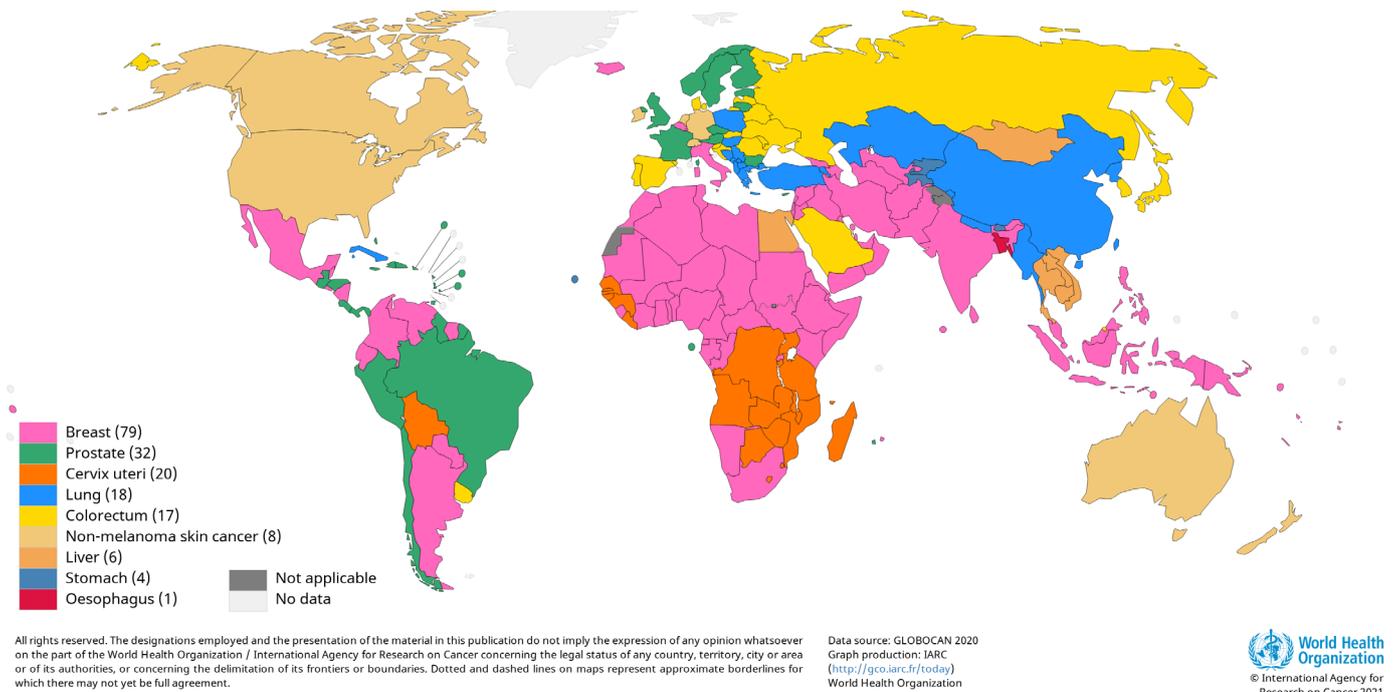


Figure 1: Top cancer per country, estimated number of new cases in 2020, both sexes, all ages ³

The spectrum of cancer control interventions includes primary prevention, screening, early diagnosis, multimodal treatment, survivorship and palliative care. In each domain, highly effective interventions have reduced the cancer burden in countries where they are widely available and used by the population. In countries with widespread access to the full range of effective measures - mainly higher income countries - cancer mortality rates have fallen and continue to do so. However, the rate of death from cancer is rising in many countries at the lower end of the spectrum. This can be changed by adoption of affordable, feasible national cancer control plans (NCCPs) for programmes to expand the services offered and financial and geographic access. Cancer control is an integral component of the path towards universal health care (UHC).

The effect of the Covid-19 pandemic on global cancer care

On 30 January 2020, the World Health Organisation (WHO) declared the outbreak of Covid-19 a public health emergency and on 11 March 2020 it was declared a pandemic.⁴ The Covid-19 pandemic has shown the interdependence of the world's economy and health.

The pandemic has had a profound effect on cancer services globally, resulting in the interruption of usual care across the whole cancer pathway from diagnosis to treatment, as governments battled to prevent their healthcare systems, particularly intensive care units, from being overwhelmed by patients. To avoid nosocomial transmission and because the risk of Covid-19 to cancer patients was unknown, routine screening was delayed, surgery and radiotherapy treatment postponed or even cancelled, and some oncologists were redeployed to Covid-19 wards.

Early in the pandemic, cancer treatments were triaged into high, medium and low priority with curative cancer treatment prioritised, and so the continuation of radiotherapy was highlighted, often over other cancer therapies such as surgery and chemotherapy which were deemed more of an infection risk to cancer patients. Hanna et. al.⁵ proposed a conceptual framework for prioritising the use of radiotherapy and systemic treatments for cancer patients during the Covid-19 pandemic:

- The highest priority given to 'imminent risk of early mortality'
- Radiotherapy given higher priority for spinal cord compression or opioid-refractory pain crisis owing to bone metastases, and concurrent chemoradiotherapy for head and neck, cervical, or anal cancers
- Mid-priority given to neoadjuvant or adjuvant indications with substantial benefit or survival benefit including radiotherapy for high-risk breast cancer
- Lower priority is suggested for palliative indications treated with immunotherapy and chemotherapy
- Finally, if alternative treatments exist or delays do not affect outcomes, then this should be the lowest priority treatment

The consequence of the interruption to cancer care and patients in lockdown not accessing health care services has been the formation of a huge cancer backlog of patients yet to be diagnosed or treated, and this number has grown as countries struggled with multiple Covid-19 waves and new variants spreading.

Radiotherapy before the Covid-19 pandemic

Radiotherapy is an increasingly important and effective yet underused, cancer treatment modality. At least 50% of cancer patients will need radiotherapy as part of their treatment and it is vital in 40% of cancer cures. Despite this, only 30% of patients receive radiotherapy, 52 countries have less than 20% of the radiotherapy they need, and 38 countries have no access to radiotherapy at all.²

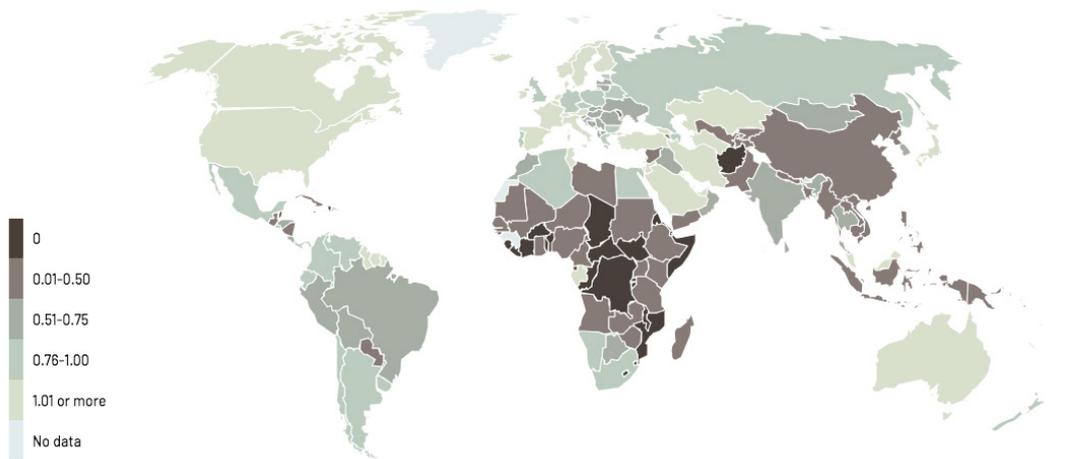


Figure 2: Number of radiotherapy machines per 1,000 cancer patients,⁶ 2020

A full course of radiotherapy costs as little as \$1000 per patient but current funding and delivery models are not aligned for this purpose. In Europe, where approximately 5% of the health budget is allocated for cancer, just 5-7% of cancer budgets are allocated to this lifesaving radiotherapy treatment.⁷

Between 2013 to 2015, the Union for International Cancer Control (UICC) brought together more than 100 experts in oncology, global health, and economics to form the Global Task Force on Radiotherapy for Cancer Control (GTFRCC). In their 2015 seminal Lancet Oncology publication², the GTFRCC concluded that there was a potential to save 1 million lives per year by 2035 through optimal access to radiotherapy, with a net economic benefit of up to US\$365 billion over the 20-year scale-up period.

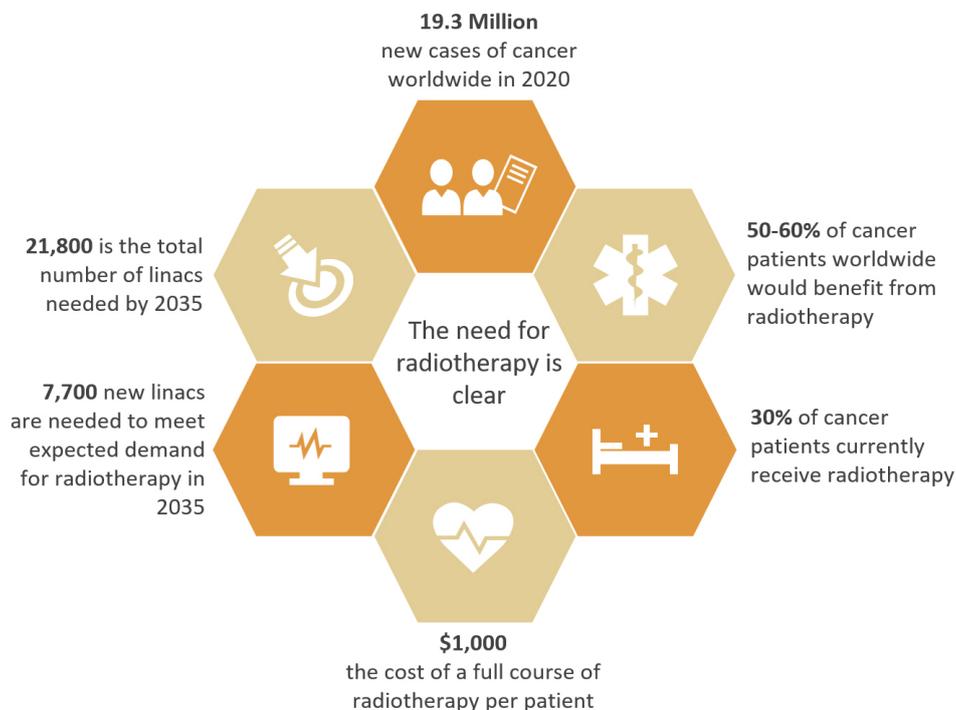


Figure 3: Summary, the need for radiotherapy^{2,8}

Global Radiotherapy advantage in the Covid-19 pandemic

Radiotherapy is a technology-based cancer treatment modality requiring a specialised workforce with patients mainly treated as outpatients. Its strength emerged during Covid-19 pandemic:

- Radiotherapy is a curative modality and thus considered a high priority treatment
- Patients are treated in designated centres and therefore avoid coming into contact with those areas of hospitals where Covid-19 infection is at its highest
- Patients are not usually immunosuppressed by the treatment
- Radiotherapy quickly emerged as a major cancer treatment which could and should continue during a pandemic and could be a substitute for surgery (radical and palliative situations) as well as chemotherapy (palliative situations)
- Radiotherapy is resilient, efficient and effective, can adapt to remote working and can directly benefit from the developments in digital communication and tele-health
- Radiotherapy can future proof cancer care response to subsequent pandemics

Radiotherapy adapted well to the pandemic. National and international organisations published recommendations to use, where possible, hypo-fractionated radiotherapy schedules; more treatment dose is delivered per day over a fewer total number of fractions, significantly reducing the number of daily patient attendances. As a result, the risk of nosocomial transmission for patients and staff is minimised. Also addressed are potential resource limitations from depletion in workforce due to staff sickness and self-isolation. Innovative and enabling technologies such as remote planning and QA were employed to reduce the number of staff needing to physically be in hospitals. During Covid-19 even more rigorous cleaning schedules were employed, and some centres dedicated a 'hot' machine for those cancer patients requiring radiotherapy treatment who had become infected with the virus.



Radiotherapy - an opportunity?

Radiotherapy provides a unique opportunity to “build forward better” in cancer care after the Covid-19 pandemic and to formulate effective cancer care plans for future pandemics. Cost effective technology and cloud-based solutions will allow greater and more reliable access to precision radiotherapy and therefore cancer treatment and cures. Ongoing improvements in imaging technologies further enhance the precision and personalisation possible with radiotherapy, and developments in AI will facilitate automation and standardisation of practices currently requiring skilled resources.

Globalisation of radiotherapy access and practice with digital networking, sharing knowledge, training and expertise will allow rapid introduction and implementation of modern radiotherapy across the world resulting in millions of lives saved.

Continued research and breakthroughs in combination therapies such as immunotherapy and radiotherapy to improve patient outcomes provide additional opportunity to increase access and awareness of the importance of radiotherapy as part of the cancer care continuum.

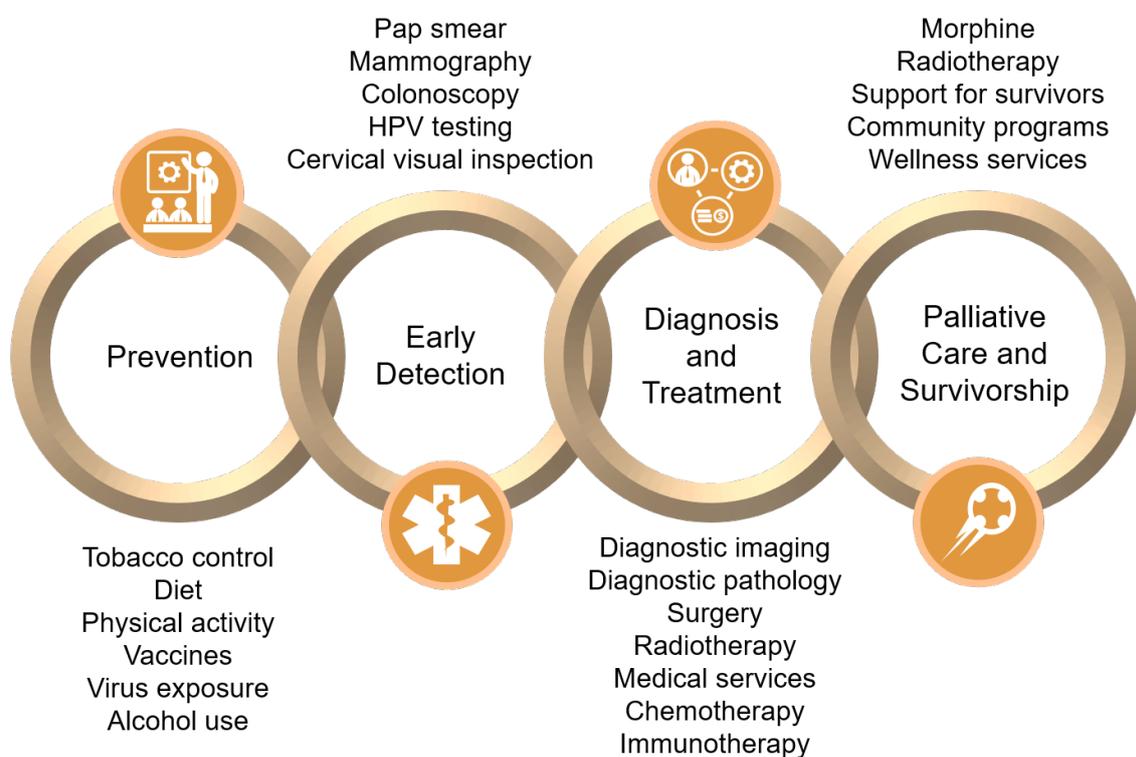


Figure 4: Summary of the cancer care continuum

Formation of the Global Coalition for Radiotherapy

Initiation of the Global Coalition for Radiotherapy

The GCR was formed in April 2020, to understand the challenges and opportunities facing radiotherapy delivery during the radical disruption of cancer services worldwide caused by the Covid-19 pandemic. The GCR initially aimed to be a group of radiotherapy professionals taking responsibility for finding short- and long-term solutions for patients during the Covid-19 emergency, by:

- Reaching out to all organisations' work and experiences to create a global radiotherapy stakeholder coalition for all parties
- Rapid dissemination of data from international experience to be shared on-line in one place
- Learning from global experience through sharing what is or is not working in various countries
- Linking with industry to find cost- and time-effective technical solutions
- Thinking at an advocacy and policy level about what is needed for radiotherapy in short, medium and long term

Timely advice and experience of adapting radiotherapy during the pandemic was shared by front line radiation oncologists from around the world via 3-weekly video meetings (starting with front line experience from Wuhan, with 44 invited senior participants for this inaugural meeting), daily website updates of relevant publications, with the website visited 860 times in the first month, and a google forum. As the world moved through the pandemic, the GCR momentum grew and by word-of-mouth virtual meetings attracted those with responsibility for global radiotherapy delivery as well as an increasing number of professionals from other cancer care disciplines.

Development of the Global Coalition for Radiotherapy

The need for a GCR in the post Covid-19 era became clear from the discussions with the multidisciplinary group of radiotherapy leaders, and the wide range of experts in radiotherapy and beyond. There was an identified need for a hub of advice and collaboration to support the global radiotherapy community to seize the opportunities for radiotherapy to adapt advanced health care delivery. Radiotherapy had suffered from previous underfunding and was underutilised before the Covid-19 pandemic; radiotherapy needs embedding into the “build forward better” momentum to achieve saving 1 million lives by 2035 through optimal access. The GCR thus developed its remit to beyond the immediate global pandemic.

There has been a revolution in technical radiotherapy over the last ten years and this has been accelerated by the Covid-19 pandemic. The GCR was founded to capitalise on the improved digital communication and collaborative work during Covid-19 to provide a network of on-the-ground support for improving access to quality radiotherapy worldwide.

The GCR now seeks to consolidate the community that has already been established in radiotherapy, related cancer care disciplines and broader stakeholders, to act collaboratively. This will include radiotherapy professionals, global radiotherapy related organisations and societies, radiotherapy and software industries, pharma and diagnostics industries, payers, patient groups and leaders of leaders. The potential GCR community consists of many stakeholders and the potential growth and reach is considerable:

- Key global radiotherapy decision makers and leaders
- The radiotherapy industry; globally worth \$5.9 Billion in 2021, growing to \$7.3 Billion by 2026
- Associated stakeholders: pharma, diagnostic imaging, policy makers and payers
- Radiotherapy professional and those clinicians with awareness of radiotherapy across all oncology disciplines
- 8,000 radiotherapy centres worldwide

Unique aspects of the GCR

The GCR will complement and consolidate, and not duplicate the work being done by various radiotherapy organizations and stakeholder groups. Its unique value is a collective focus on improvement in quality radiotherapy and access as well as:

- Facilitating real time, nimble interactions with a comprehensive wide range of global radiotherapy experts ranging from academia, industry, professional bodies, individual leaders, providers and organisations
- Developing a community of extended stakeholders including diagnostics, diagnostic imaging, software and AI, pharma and wider cancer policy leaders
- Fostering and supporting individual projects with far reaching global impact such as cloud-based technology and use of implementation science in radiotherapy
- Responding to global radiotherapy challenges during humanitarian crises, including COVID-19 and the war in Ukraine

Achievements of the Global Coalition for Radiotherapy – Year 1 & 2

Regular Webinars and Roundtables

Since April 2020, the GCR has established and effected regular roundtable webinars with multidisciplinary professionals and stakeholders from around the world to act as a hub for exchange of contacts, information and resources.

At the start of the pandemic, timely advice, and experience of adapting radiotherapy during the pandemic was shared by front line radiation oncologists from around the world via 3-weekly video meetings. The GCR heard from experts in China, Singapore, Italy, UK, USA and Japan as well as from the UICC, City Cancer Challenge, ZERO and IAEA.

As the world moved through the pandemic, the topics of the meetings evolved towards a long-term view of radiotherapy during the pandemic, recovery and in the future. Topics included:

- Global advocacy efforts
- Challenges in expanding global access to radiotherapy and the economics
- Fractionation schedules published during the Covid-19 pandemic and the need to drive for value-based reimbursement
- Improving access to radiotherapy using cloud-based solutions
- The use of implementation science to developed value-based care in radiotherapy
- The value of public reporting of outcomes
- Closing the care gap with radiotherapy solutions

For a full list of round table speakers and topics, see [appendix - table 1](#).

The general format of the webinars was a round table meeting with presentations from invited speaker(s) followed by a discussion between the invited attendees. Recordings of the webinars are available on the [GCR website](#) as well as the new [GCR YouTube channel](#) for broader distribution and discovery. Outcomes of these meetings have included several publications (described in the next section), creation of a network through social media, Slack and website forums and scoping of project collaboration with the intent to have global impact.

The GCR has a regular participant number of 50-60 people from invited organisations around the world, and that number is consistently growing.

After the February 2022 invasion in Ukraine, the GCR responded to an immediate request from the WHO Emergency Committee to collect information and support around radiotherapy. This [collected data and formation of a Radiotherapy Task Force](#) is vital in the WHO response to the refugee crisis in Ukraine.

Publications

As part of the outcomes of the GCR's regular webinars and roundtables, the GCR has published:

- A statement of initiation
- A Lancet Oncology commentary article
- A white paper on hypofractionation evidence
- An editorial in the International Journal of Radiation Oncology, Biology, Physics
- An advocacy toolkit for creating radiotherapy campaigns on a local and global scale
- A white paper on "How Radiotherapy Can Close the Care Gap"

In detail, the first publication from the GCR was the statement on '**Initiation of The Global Coalition for Radiotherapy during the 2019 Novel Coronavirus Disease (COVID-19) Pandemic**', which was then published in June 2020 in Lancet Oncology.⁹

White papers have been produced providing state of the art opinion on timely topics. The GCR published a white paper to inform on the complex issue of altered radiotherapy treatment in response to the pandemic and presents the coalition's philosophy on this, discusses the issues involved and suggests a way forward to support decision making. The publication titled '**Altered radiotherapy fractionation: what did we learn during the Global Covid-19 Pandemic and what do we take forward to optimize radiotherapy fractionation for the future**' was a global collaboration with 13 authors contributing to the main discussion as well as those that participated in the meeting. A white paper is currently being prepared following a roundtable on World Cancer Day 2022 on how radiotherapy with its advanced technology can be used to close the cancer care gap.

Recently, the GCR has had an editorial accepted by the International Journal of Oncology, Biology, Physics, summarising 'The Role of the Global Coalition for Radiotherapy in Political Advocacy for Radiation Therapy as a Cost-Effective and Underfunded Modality Around the World'¹⁰. This has been followed by the development of an advocacy tool kit which will be available on the website.

Website and social media

As we usher in another anniversary of the GCR, we have redesigned and relaunched the **GCR website** to become more than a landing page for relevant publications, but also a resource for radiotherapy advocacy and networking amongst the global radiotherapy community. Since the relaunch, our site visits have increased more than 2,000%. The website will continue to grow as we develop Advocacy, Resource and Event pages, which will reach our different target audiences.

In May 2020, the GCR twitter, **@GlobalIRTCo**, was launched to advertise the webinars and to connect with participants. Since then, growth and engagement has increased 70%.

2022 brought a series of other social tools, including a **GCR Facebook page**, a **GCR YouTube channel** and the **GCR LinkedIn profile**. These channels are already seeing excellent growth.

External webinars and conferences

The GCR has been asked to contribute and participate in conferences, as well as to help organise agendas and speakers.

The Economist – World Cancer Series: Europe Summit 2020 and 2021

The GCR was invited to moderate a seminar titled ‘Radiotherapy advances post-Covid: a digital revolution to drive improvements in cancer care plans’ and to help organise a roundtable discussion about ‘ensuring equal access in Europe to radiotherapy – a crucial cancer treatment’ in 2020 and moderate a roundtable on global radiotherapy in 2021.

Wilton Park

The GCR was asked to help organise a roundtable as part of a workshop entitled ‘Peaceful nuclear technology and advancing best practices for radiation therapy’. The roundtable focused on how to develop and implement remote treatment planning, its challenges, and opportunities for developing states and particularly Africa

City Cancer Challenge ECHO project

The GCR contributed to the project delivering technical assistance on Radiotherapy Technology Procurement and Maintenance to City Cancer Challenge cities 2021.

World Economic Forum/ Lung Ambition Alliance

The GCR was invited to participate in the development of the recommendations for the *Reducing Premature Mortality from Lung Cancer* report.

Interviews with GCR stakeholders

Comprehensive interviews with 20 global experts and stakeholders to understand the value of the GCR were conducted between July – October 2020; a full list of the participants is given in the **appendix – table 2**. The general agreement was that there is a need for the GCR now and long-term. It is critical that there is a group with a global focus on radiotherapy. We need to learn from the Covid-19 pandemic and implement best practices for the future, ensuring cancer care and treatment are part of pandemic preparedness and universal health coverage.

Global Coalition for Radiotherapy Goals and Objectives: 2022-2026

The GCR is well placed, committed and poised to support political advocacy and development projects on a regional and local level. The GCR is developing a digital communication hub to create links with complementary organisations and professionals in IT, AI, data collection, cloud-based solutions, global health economics, advocacy, and messaging. Knowledge of comparison of funding, tariffs, reimbursement, and best practices in countries can be shared as well as media stories and knowledge of public opinion. Mechanisms to do this are being developed and put in place including planned round tables, regular video exchanges, communication via forums, publication of multidisciplinary white papers, tool kits and advice for advocacy and in future support for data analysis and communication strategies.

Governance structure

- The GCR is in a period of growth and will make changes to the governance and partner structure in 2022.
- **Co-Founders** include Prof. Pat Price, Shandi Barney and Birgit Fleurent with oversight of operational matters and agreed deliverables.
- **Leadership Team** includes Prof. Pat Price, Shandi Barney, Birgit Fleurent, Therese Lindé, Teresa Gmur, Oliver Fraederich and Darien Laird, acting as Director of Communications.
- **Corporate Partners** include Accuray, Elekta and Varian. They financially support the GCR and are integral to the decision making process. The GCR continues to invite additional partners.
- **Strategic Partners** include AdvaMed, American Association of Physicists in Medicine (AAPM), Association of Residents in Radiation Oncology (ARRO), C/Can City Cancer Challenge, COCIR Advancing Healthcare, European Society Radiation Oncology (ESTRO), Gamma Gurus, International Atomic Energy Agency (IAEA), IRCCS Policlinico, National Cancer Centre Singapore, Princess Margaret Cancer Center, Radiation Therapy Advisory Group (RTAG), Radiotherapy UK, Union for International Cancer Control (UICC), ViewRay, World Health Organization (WHO), and ZERO Cancer Foundation. The Co-Founders are actively engaging with future Stakeholders, as this group continues to grow.
- **Community Partners** include clinicians, physicians, industry, advocates, public officials, patients and any interested parties who attend GCR webinars, have subscribed to GCR newsletters and engage with GCR via social media.
- **Fiscal Agent** is the UICC, based in Geneva. They provide financial governance to the GCR, which is a legal entity through a UK Company, limited by guarantee (non-profit).

The GCR will reach the goals of increased access to quality radiotherapy and creating a global community where best practices can be implemented, thus saving 1 million lives each year, by executing the following objectives:

1. Amplify membership and partnership structure

- Establish a formal partnership structure and appoint an Advisory Board
- Increase our Community Partner membership by communicating regularly through newsletters and providing networking and training opportunities in tandem with Stakeholders and via the GCR website
- Increase digital and social engagement through our new social media channels by more than 100%

2. Organise global roundtables and webinars, with strategic impact projects as outcomes

- Hold bi-annual events where the entire GCR community can come together to discuss advocacy projects, strategies to incorporate radiotherapy into national cancer control plans, value-based care assessments, incorporation of implementation science into radiotherapy developments, and tools for use by the cancer care community
- Draw on our Founding Partners, Stakeholders and Community Partners as expert speakers and roundtable contributors
- Publish and make available to the GCR members and beyond white papers, reports and outcomes from our global roundtables and webinars

3. Implement the GCR communication and social media strategy

Under the direction of a new Director of Communications, the GCR communications and social media strategy will accomplish the following objectives:

- Redesign the website, creating a networking space and resource tool for members and advocates
- Expand and develop new social media channels
- Reach the GCR subscribers and Community Partners on a monthly basis with newsletters, resources, publications and information about upcoming events and webinars
- Provide increased exposure to GCR Leadership Team, Stakeholders and Community Partners via video interviews, social media exposure, podcasts and live events

4. Increase engagement with the GCR website

As the GCR website continues to develop as a growing resource, Community Partners and Stakeholders will be able to utilize it to:

- Participate in and access the growing number of GCR webinars and roundtable recordings. By also providing the recordings on YouTube, they become easily shareable to the radiotherapy community on a truly global scale
- Access news and publications, as well as campaign developments in the radiotherapy world
- Access the GCR Advocacy Toolkit and appendixes, which will expand radiotherapy campaigns on a global scale. The GCR will be ready to support campaigns with strategic advice
- Network with other members of the radiotherapy community by being able to access events and information pertinent to our target audience

5. Continue funding strategy to establish GCR independence

The value of the GCR in bringing the broader cancer care community together will allow opportunity for additional funding partners to be engaged:

- Companies in the broader radiotherapy industry will be able to increase their global reach, create awareness and visibility for their offering and connect with leading experts they may not normally have access to
- Diagnostic imaging plays an increasingly important role in quality radiotherapy and can expand a company's reach and access to experts globally, as well as providing support for specific projects that are mutually beneficial
- Pharmaceuticals represent a treatment modality often combined with surgery and radiotherapy, and in the case of immunotherapy effectiveness has been shown to be enhanced in combination with radiotherapy. Funding GCR adds value for the pharmaceutical industry through visibility, expanded access to customers and clinical expertise as well as providing support for specific projects that are mutually beneficial
- Software and AI-based platforms are increasingly focused on healthcare. Investment in cancer and radiotherapy provides an opportunity for significant growth with GCR offering projects, experts and global reach



Appendix

Table 1: Summary of the GCR webinars and roundtables

Date	Speaker(s), Agenda and Outcome
08.04.20	<p>Professor Conghua Xie, M.D., Chair of Department of Radiation Oncology, Zhongnan Hospital of Wuhan University, China and Professor Melvin L. K. Chua, MBBS, PhD, Division of Radiation Oncology, National Cancer Centre Singapore</p> <p>Global Radiotherapy response to COVID-19: Experience from Wuhan City, China</p> <p>Outcomes: Launched GCR website and global statement</p>
05.05.20	<p>Dr Filippi, Radiation Oncology Department, Fondazione IRCCS Policlinico San Matteo and University of Pavia Italy - Italian experience</p> <p>Professor Pat Price MA MD FRCR FRCP Department of Surgery and Cancer, Imperial College London, Chair of Action Radiotherapy, Co-founder of the GCR - UK flash survey results: Action Radiotherapy</p> <p>Outcomes: Forum launched</p>
26.05.20	<p>Dr Louis Potters, MD, FACR, FASTRO - New York City experience</p> <p>Dr Julie Torode, Union for International Cancer Control (UICC) - Covid-19 and Cancer Taskforce</p> <p>Outcomes: GCR twitter launched and newsletter update sent to participants</p>
16.06.20	<p>Professor Nagata, Professor & Chairman, Dept. of Radiation Oncology, Hiroshima University Hospital - the current status of RT in Japan with covid-19 infection</p> <p>Isabel Mestres, City Cancer Challenge – How C/Can have responded to Covid-19</p> <p>Therese Linde, Global Director Public Affairs, Elekta, co-founder of the GCR - How can the GCR support advocacy efforts across the community?</p>
07.07.20	<p>Professor Richard Sullivan, Professor of Cancer and Global Health at King's College London, and Director of the Institute of Cancer Policy (ICP) and co-Director of the Conflict and Health Research Group - 'The Future of Global Cancer in the Time of COVID?'</p> <p>Birgit Fluere, co-founder of the GCR - Building on our Momentum: Vision, Mission and Strategic Objectives for the Global Coalition for Radiotherapy</p>
28.07.20	<p>Colony Brown, SVP Marketing and Communications, ZERO—The End of Prostate Cancer</p> <p>Geraldine Arias De Goebel, Section Head, Cancer Control Review and Planning Section, IAEA</p> <p>COVID-19 Impacts on the U.S. Prostate Cancer Community and IAEA Programme of Action for Cancer Therapy: Conduct of Cancer Control Assessments (imPACT Reviews) during COVID-19</p>

01.09.20	Professor Mary Gospodarowicz , Medical Director, Princess Margaret Cancer Centre, University Health Network - Challenges in expanding global access to radiotherapy
13.09.20	Dr. David Thomson , MA, MD, FRCR, Department of Clinical Oncology at The Christie NHS Foundation Trust - Dr. Thomson is one of the authors of the recently published “Radiation Fractionation Schedules Published During the COVID-10: Pandemic: A Systemic Review of the Quality of Evidence and Recommendations for Future Development.” Outcomes: White Paper on altered fractionation during and after the Covid pandemic
08.12.20	Professor Yolande Lievens , Evidence and economics as drivers for change in global radiotherapy. Aim - to discuss the economics of investing in radiotherapy during and after Covid. To be reviewed: (i) The overall economic case for investment in radiotherapy integrated in cancer plans (ii) The specifics of tariff-based reimbursement for radiotherapy
09.02.21	Ben Nelms , Founder and Director of ProKnow and Dr Benjamin Li , Founder & President of Rayos Contra Cancer and Radiation Oncology Residency, University of California San Francisco - Putting the cloud to work to improve access to radiotherapy Outcome: GCR slack group created for communication between participants
13.04.21	Dr Ajay Aggarwal Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine and Department of Clinical Oncology, Guy’s and St Thomas’ NHS Foundation Trust, London UK - Public Reporting of Outcomes in Radiation Oncology: how to achieve greater transparency, quality improvement and value-based cancer care. This will be followed by a round table discussion on the work will include: (i) The value of public reporting of patient outcomes at the individual hospital and clinician level to improve accountability and quality of radiotherapy delivered; barriers for implementation and is policy change needed (ii) The value of outcome indicators in patient choice, benchmark best practice, and support quality improvement strategies (iii) Is this something which can be implemented globally and how will developments in IT and digital technology help
18.05.21	Dr Edward L. Trimble , MD, MPH, Senior Advisor for HPV and Global Cervical Cancer Research and Control and Office of the Director, National Cancer Institute, National Institutes of Health USA and Dr. Surbhi Grover , MD, MDH, Assistant Professor Radiation Oncologist University of Pennsylvania, co-chair of the AORTIC radiation oncology working group and co-chair of the ASTRO global health working group. Implementation and implementation science: how to improve global access to quality radiotherapy
13.07.21	Dr Rolando Camacho , Dr Thet Ko Aung and Prof Kin Cho Win – Integrating radiotherapy in national cancer control programs: A city wide approach

12.10.21	Professor Anthony Zietman , former president of ASTRO and editor of the Red Journal leads discussion and roundtable – Can little radiation oncology sway big governments? Outcomes: GCR Advocacy Toolkit in development
08.02.22	Steve Laws , VP Advanced Oncology Solutions in EMEA, Varian, and Paul Naine , Director of Clinical Operations, Elekta – How Can Radiotherapy Close the Care Gap? Roundtable led by Professor Pat Price, MA MD FRCR FRCP Department of Surgery and Cancer, Imperial College London, Chair of Action Radiotherapy, Co-founder of the GCR Outcomes: White paper in development
15.03.22	Emergency GCR Webinar to support Ukraine led by Professor Pat Price, MA MD FRCR FRCP Department of Surgery and Cancer, Imperial College London, Chair of Action Radiotherapy, Co-founder of the GCR Under request of the WHO Emergency Committee, the GCR gathered information to address the challenges being faced by Ukrainian cancer patients, including lack of data/ medical records, language barriers, access to treatment information, capacity issues, lack of resources and need for connectivity to other European countries. Outcomes: Formation of the Radiotherapy Task Force

Table 2: Participants of the comprehensive interviews conducted to understand the value of the GCR between July – October 2020

Last name	First name	Title	Organisation
Abdel-Wahab	May	Director of the Division of Human Health	International Atomic Energy Agency (IAEA)
Adams	Cary	CEO	Union for International Cancer Control (UICC)
Beirne	Jason	Managing Guru	Gamma Gurus Pty Ltd
Brown	Colony	VP Marketing and Communications	ZERO Cancer Foundation
Camacho	Rolando	Global Special Advisor, Technical Assistance	City Cancer Challenge
Chua	Melvin	Associate Professor Radiation Oncology	National Cancer Centre Singapore
Corridori	Riccardo	Environmental Health & Safety Sr. Mgr.	COCIR
Denjoy	Nicole	Secretary General	COCIR
Fidarova	Elena	Technical Officer	World Health Organisation (WHO)
Filippi	Andrea	Prof. & Chairman of Radiation Oncology	IRCCS Policlinico & Univ. of Pavia
Gasparatto	Chiara	Director of Policy and Partnerships	ESTRO
Gospodarowicz	Mary	Professor and Medical Director	Princess Margaret Cancer Center, Toronto
Lievens	Yolande	Professor and Chair of Radiation Oncology	University of Ghent, Ghent, Belgium
Martin	Richard	Government Relations Program Manager	American Association of Physicists in Medicine
Mestres	Isabel	Director Global Public Affairs & Partnerships	City Cancer Challenge
Nagata	Yasushi	Prof & Chairman, Dept of Radiation Oncology	Hiroshima University Hospital
Nitzsche	Anja	Head, Resource Mobilisation	International Atomic Energy Agency (IAEA)
Potters	Louis	Chairman, Dept. Of Radiation Medicine	Northwell Hospital, New York
Roitberg	Filipe	Technical Consultant	World Health Organisation (WHO)
Sullivan	Richard	Prof. of Cancer & Global Health, Director ICP	Kings College London

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References

1. <https://gco.iarc.fr/>
2. Atun R, Jaffray DA, Barton MB, et al. Expanding global access to radiotherapy. *Lancet Oncol* 2015; **16**(10): 1153-86.
3. Data source: GLOBOCAN 2020, Graph production: IARC (<http://gco.iarc.fr/today>), World Health Organization.
4. www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline#!
5. Hanna TP, Evans GA, Booth CM. Cancer, COVID-19 and the precautionary principle: prioritizing treatment during a global pandemic. *Nat Rev Clin Oncol* 2020; **17**(5): 268-70.
6. canceratlas.cancer.org/data/map/
7. Lievens Y, Defourny N, Corral J, et al. How public health services pay for radiotherapy in Europe: an ESTRO-HERO analysis of reimbursement. *Lancet Oncol* 2020; **21**(1): E42-E54.
8. www.who.int/news-room/fact-sheets/detail/cancer
9. Price P, Barney SE. Initiation of the Global Coalition for Radiotherapy during the COVID-19 pandemic. *The Lancet Oncology* 2020; **21**(6): 752-3.
10. Price P, Fleurent B, Barney SE. The Role of the Global Coalition for Radiotherapy in political advocacy for radiation therapy as a cost-effective and underfunded modality around the world. *Int J Radiat Oncol Biol Phys*, 2021 Sep 1;**111**(1):23-26