RADIATION ONCOLOGY CURES CANCER SAFELY, TODAY

ESTRO Toolkit for Radiation Oncology Advocacy in Europe

Unmet needs

Key advocacy messages and resources

Implementing a radiation oncology advocacy campaign
ESTRO’s Vision for 2020 is for the majority of patients to live cancer-free with minimal toxicity following the use of state-of-the-art, radical, curative radiation oncology, either alone or in combination with other treatment modalities [Valentini et al. 2012].

ESTRO’s advocacy actions aim to address the principal unmet needs in radiation oncology at the European level, namely:

1. A low level of awareness and understanding of radiation oncology among policymakers, within some fields of the medical community, and among patients. In particular, aspects of radiation oncology that are not well recognised include its status as a medical discipline, its substantial contribution to curing cancer, its safety profile, low cost and cost-effectiveness, and its contribution to innovation in cancer care.

2. The inefficient and inconsistent positioning of radiation oncology within multidisciplinary cancer care models that are not aligned with the current evidence-base. There is also an insufficient adherence to treatment guidelines.

3. Inequalities between countries in patients’ access to state-of-the-art radiation oncology services. The ESTRO Health Economics in Radiation Oncology (HERO) project documented large variations across Europe in staffing levels and access to modern equipment [Grau et al. 2014; Lievens et al. 2014] and in the proportion of patients who receive radiation oncology when it is clinically indicated [Borràs et al. 2015].

4. The need for further clinical and health service research to a) further enhance the effectiveness, precision and safety of radiation oncology (in particular in combination with other care modalities) to allow more patients to benefit, and b) document patterns of radiation oncology provision and provide economic analyses of radiation oncology services.

5. The lack of European-wide harmonisation in the training of radiation oncology professionals (radiation oncologists, medical physicists and radiation therapists) and in the recognition of their professional qualifications. This also reflects a lack of importance given to radiation oncology in medical education.

6. The lack of a systematic and certified evaluation of clinical outcomes associated with specific cancer treatment modalities (radiation oncology, medical oncology (chemotherapy) and tumour surgery), and related costs, in European countries.

What are the aims of radiation oncology advocacy?

What do we want to achieve?
What do we want to achieve?

ADVOCACY AT EUROPEAN AND NATIONAL LEVELS

In its European-level advocacy programme, ESTRO seeks to align key stakeholders toward common objectives that improve patient outcomes by promoting the optimal, patient-centred use of radiation oncology in multidisciplinary cancer care. The overall aim and key performance indicator (KPI) is to increase the number of patients who actually receive radiation oncology as a proportion of those who should receive it according to evidence-based indications.

The specific objectives of the 2016–2017 ESTRO European advocacy programme for the next 2 years are to:

- Increase awareness and understanding among patient groups, policymakers and health stakeholders of the medical discipline of radiation oncology and its importance and benefits (e.g. contribution to cure, cost-effectiveness, safety and innovation).
- Create a more favourable policy environment to promote access to state-of-the-art radiation oncology treatment.
- Foster a more efficient European cancer community that supports an optimal, evidence-based positioning of radiation oncology within patient-centred, multidisciplinary cancer care models.

We know that significant, and often unjustified, differences exist across Europe in terms of patients’ access to radiation oncology. These stem from variances in accepted cancer care models, a lack of capital resources, and inconsistencies in the training of radiation oncology professionals.

Every country has different circumstances and hence national advocacy efforts will further focus on identifying and addressing those challenges that require localised attention. The role of national societies is of paramount importance. Advocacy programmes that draw upon best practice to address specific national deficiencies and take advantage of relevant national policy streams are essential to achieving real change at country level.
KEY ADVOCACY MESSAGES AND RESOURCES

Radiation oncology cures cancer safely, today

- Radiation oncology — a curative medical discipline
- Radiation oncology in multidisciplinary care
- Safety of radiation oncology
- Cost-effectiveness of radiation oncology
- Innovation in radiation oncology
- Access and sustainability of radiation oncology services
- Introduction
Introduction

Cancer is the main cause of death in Europe, and worldwide, after cardiovascular diseases [GBD 2015]. In 2012, there were 3.45 million new cases of cancer and 1.75 million deaths from cancer across the 27 Europe member states of the time [Ferlay et al. 2013]. Cancer cost the EU €126 billion in 2009. Healthcare delivery accounted for €51 billion (40%) of this cost, with the rest being indirect costs of lost productivity through early death, lost working days and informal care. [Luengo-Fernandez et al. 2013]. (Infographic 1: Impact of cancer in Europe)

Radiation oncology is a cornerstone of modern cancer treatment, and yet it receives relatively little attention by policymakers in many European countries and there are important variations and deficiencies in access to radiation oncology services [Grau et al. 2014; Lievens et al. 2014; Borràs et al. 2015]. Moreover, the need for radiation oncology services will rise with the increasing burden of cancer in Europe: about 4 million new cancer patients are predicted in 2025 in Europe based on demographic changes, and the need for radiotherapy in Europe on average is expected to increase by 16% from 2012 to 2015.

This guide is intended to support advocacy efforts, at both the European and national levels, to improve patients’ access to state-of-the-art radiation oncology services.

INFOGRAPHIC 1: IMPACT OF CANCER IN EUROPE

Cases and deaths: There are around **3.45 million new cases of cancer** and **1.75 million deaths from cancer** each year across Europe (2012 data for 27 member states) [Ferlay et al. 2013].

The **biggest cancer killers** in Europe include lung, rectal, breast, prostate and head and neck cancers [Ferlay et al. 2013] – these are all key indications for radiation oncology.

Costs: **Cancer cost the EU €126 billion** in 2009. Healthcare delivery accounted for €51 billion (40%) of this cost, with the rest being productivity losses because of early death cost €42.6 billion (34% of the total), lost working days €9.43 billion (7.5%) and informal care, €23.2 billion (18.4%). Cancers of the lung, breast, colon-rectum and prostate were the most costly cancers [Luengo-Fernandez et al. 2013].

Effective advocacy requires the right messages to be provided to the right audiences at the right times. This section provides a variety of messages that can be used (or adapted) in advocacy communications targeting all key stakeholders, e.g. policymakers, patients and patient organisations, and industry partners.

The overall key message for ESTRO’s EU advocacy programme is: “**Radiation oncology cures cancer safely, today**”. This overall message is supported by various sub-messages on the themes of:

- Radiation oncology — a curative medical discipline
- Radiation oncology in multidisciplinary care
- Safety of radiation oncology
- Cost-effectiveness of radiation oncology
- Innovation in radiation oncology
- Access and sustainability of radiation oncology services.

View the messages
DEFINING AND DISTINGUISHING RADIATION ONCOLOGY

Many decision-makers may not fully understand what radiation oncology is, how it is used, and by whom. For example, radiation oncology is sometimes being confused with diagnostic radiology, and there is a failure to consider radiation oncology and clinical oncology as the same discipline in many European countries. ESTRO recommends the following messages to help define radiation oncology for advocacy purposes.

- Radiation oncology (or radiotherapy) is the medical discipline that uses radiation to treat patients with cancer, often in combination with medical therapies and surgery.
- Radiation oncology is not the same as radiological imaging, the latter relating to the technical use of radiation for diagnostic purposes.
- Radiation oncology is an important part of multimodality cancer treatment – radiation oncologists are actively involved in all parts of the management of the cancer patient, not only with radiotherapy.
- In several European countries radiation oncology and medical oncology are highly integrated and referred to as the specialty clinical oncology. A radiation oncologist is also a clinical oncologist, who can prescribe chemotherapy exactly like a medical oncologist.
- Radiation oncology therapy is prescribed by highly skilled oncologists – clinical and radiation oncologists – and delivered by inter-disciplinary teams: oncologists, medical physicists and radiation therapy technologists (RTTs), using sophisticated technologies.
- Radiation oncology is an essential part of modern cancer treatment — optimally, around half of all cancer patients in Europe should receive radiation oncology at some point in their disease [Borràs et al. 2015].
- Radiation oncology plays an important role in the treatment of most cancers, including many of the biggest cancer killers in Europe, such as lung, rectal, breast, prostate and head and neck cancers [Ferlay et al. 2013].
- In Europe, radiotherapy is the treatment of choice for about 8 out of 10 patients for breast and head and neck cancer, and for about 7 out of 10 for lung and esophagus [Borras et al, 2015 ].
- Radiation oncology can be given to cure cancer, either alone or in combination with other treatment approaches (surgery and systemic therapies such as chemotherapy, hormonal treatments and immunotherapy), or for palliation to improve symptoms and quality of life in patients with incurable cancers.
- Radiation is an ‘organ-sparing’ therapy that minimises the effect on the surrounding healthy tissues and is well-suited for a wide range of patients, including the elderly.

Safety of radiation oncology

WE CURE CANCER TODAY

Many decision-makers, and even some healthcare professionals, may not be fully aware of the substantial contribution that radiation oncology currently makes to curing cancer. As well as being the focus of the overall key advocacy message, “Radiation oncology cures cancer safely, today”, this aspect is emphasised in the following messages.

- Radiation oncology plays a leading role in curing cancer today – saving and prolonging lives.
- Radiation oncology and surgery are the treatment approaches that contribute most to cancer cures.
- Globally in 2012, more than 580 000 people would derive a survival benefit from radiotherapy if all patients needing radiotherapy had access — this is estimated to rise to 950 000 by 2035 [Atun et al. 2015].
- ESTRO's Vision for 2020 is for the majority of patients to live cancer-free with minimal toxicity following the use of state-of-the-art, radical, curative radiation oncology, either alone or in combination with other treatment modalities [Valentini et al. 2012].
Radiation oncology in multidisciplinary care

Multidisciplinary care is a cornerstone of modern cancer treatment and should be provided consistently to all patients with cancer in Europe [EPAAC 2014].

Multidisciplinary teams have been defined as “an alliance of all medical and health care professionals related to a specific tumour disease whose approach to cancer care is guided by their willingness to agree on evidence-based clinical decisions and to co-ordinate the delivery of care at all stages of the process, encouraging patients in turn to take an active role in their care” [EPAAC 2014].

Multidisciplinary care should be evidence-based and co-ordinated at all stages of the care process from the point of diagnosis onwards, encouraging patients to take an active role [EPAAC 2014].

ESTRO recommends the following key messages regarding the role of radiation oncology within multidisciplinary care.

→ Radiation oncology is a key element within multidisciplinary care. According to ESTRO’s Vision for 2020, every cancer patient in Europe should have access to state-of-the-art radiation oncology treatment, as part of a multidisciplinary approach whereby treatment is individualised for the specific patient’s cancer and circumstances [Valentini et al. 2012].
→ In many countries, radiation oncology is currently under-used, or used too late, in care models [Borràs et al. 2015].
→ The under-use of radiation oncology deprives patients of its benefit and reduces the efficiency of healthcare.
→ Radiation oncology should be positioned in care models according to a patient-centred, evidence-based approach. Radiation oncology is an important part of multimodality cancer treatment but is often under-valued.
Misperceptions regarding the toxicity of radiation oncology may contribute to its under-valuation among health policymakers and the public. ESTRO recommends the following key messages regarding the safety of radiation oncology.

- Radiation oncology is a safe, high-quality, tailored treatment approach that is individualised for each patient.
- State-of-the-art radiation oncology precisely targets the patient's tumour with the lowest effective dose, minimising radiation effect on the surrounding healthy tissue.
- Examples:
  - Intensity modulated radiation therapy (IMRT) precisely varies the intensity of multiple radiation beams to better conform the delivered dose to the target and protect healthy tissue.
  - 4-dimensional (4-D) radiation oncology shapes the radiation beams to the moving tumour and ensures that the target is selectively hit even when it moves as the patient breathes.
  - Image-guided radiotherapy (IGRT) allows very precise targeting of the defined tumour, by using smaller margins of healthy tissues as part of the target to be treated. It reduces treatment toxicity, spares the surrounding normal tissue from receiving doses above specified dose tolerances, and ensures daily accuracy.
- Radiation oncology centres operate strict safety and quality assurance (QA) frameworks to ensure that treatment is as effective, safe and well tolerated as possible.
- Radiation oncology benefits from being highly acceptable for patients, owing to its limited invasiveness and organ-sparing potential compared with surgery in many different situations (e.g. breast, glottis, limbs and prostate).
When discussing the economics of therapies it is important to distinguish between ‘cost’ and ‘cost-effectiveness’ – the latter taking into account patient outcomes. The cost-effectiveness of all cancer therapies is under particular scrutiny in light of the constraints on healthcare budgets. Radiation oncology services face particular challenges in this regard for several reasons:

→ Radiation oncology is widely perceived – incorrectly – as a very expensive modality, owing to the high initial cost of equipment, the building to house it and the highly specialised staff to operate it. However, the equipment is used for multiple sessions in many patients, and typically its costs are depreciated over a period of 10 years or so.

→ Formal cost-effectiveness data and elaborate business models are typically required to support healthcare policy making and investment planning for new radiation oncology resources [Poortmans et al. 2015]. However, there has been relatively little research into the cost-effectiveness of innovative radiation oncology modalities, as compared with that of medical oncology treatments [Van Loon et al. 2012; Lievens & Pijls-Johannesma 2013; Barbieri et al. 2014; Nguyen et al. 2015]. In part this is because health authorities have only recently begun to request cost-effectiveness evidence to support investment in radiation oncology [Lievens et al. 2015a].

→ The cost-effectiveness of radiation oncology is difficult to assess owing to the rapid evolution of the technology and the lack of capital and infrastructure support to perform randomised trials. The methods typically used to evaluate the cost-effectiveness of medical treatments are not easily applicable to radiation oncology. Moreover, it is generally unrealistic to directly compare the cost-effectiveness of radiation oncology and medical oncology treatments because these are generally used for treating different cancers or at different stages of care [Poortmans et al. 2015].

→ Further research into the costs, cost-effectiveness and value of radiation oncology is essential to support the introduction of innovative modalities [Lievens et al. 2015a; Lievens et al. 2015b].

ESTRO recommends the following key messages with respect to the cost of radiation oncology.

→ Radiation oncology is a low-cost, high-quality treatment modality.
  • Globally, the one-time, upfront cost to establish new radiation oncology capacity, covering start-up investment and professional training, is around $350 (€308) for each individual dose (or ‘fraction’) in lower-middle income countries and $800 (€704) per fraction in high-income countries. Thereafter, operating costs (including capital depreciation) range from a mere $60–$86 (€53–76) per 3D-conformal radiotherapy fraction in lower-middle income countries, compared with $235 (€207) in high-income countries, here allowing a mix of conformal and intensity-modulated fractions [Atun et al. 2015]. (Infographic 2: Radiation oncology is a low-cost treatment modality and Infographic 5: Global radiation oncology: the GTFRCC study)
  • In Belgium, the average cost of a radiotherapy course for the major cancer indications is €4,266 – this includes equipment, materials, personnel and overheads. Even the most expensive radiation oncology modalities studied (such as accelerated partial breast irradiation and intensity-modulated radiotherapy) cost less than €10,000 per treatment course [Hulstaert et al. 2013].
  • In Belgium, stereotactic body radiotherapy (SBRT) for lung cancer has been carefully costed at €6,222 per course, in the range of average costs of standard fractionated 3D-conformal radiotherapy (€5,920) and intensity-modulated radiotherapy (€7,379), with hypofractionated schemes costing less than €5,000 [Lievens et al. 2015B].
ESTRO recommends the following key messages with respect to the cost-effectiveness of radiation oncology:

- The costs of radiation oncology are typically lower than those of cytotoxic drugs (especially new molecular targeted agents). However, direct cost-effectiveness comparisons, taking into account the outcomes of treatment, are generally unrealistic owing to differences in the diseases treated.
- New radiation oncology modalities (such as intensity modulated radiotherapy, image-guided radiotherapy, stereotactic body radiation) are generally cost-effective compared with less advanced radiotherapy technologies, with incremental cost-effectiveness ratios (ICERs) usually below standard thresholds for cost-effectiveness (i.e. less than €50,000 per quality adjusted life year [QALY] gained) [Lundkvist et al. 2005; Konski et al. 2006; Sher et al. 2011; Amin et al. 2014].

INFOGRAPHIC 2: RADIATION ONCOLOGY IS A LOW-COST TREATMENT MODALITY

**COST**

Globally, the one-time, upfront cost to establish new radiation oncology capacity (covering start-up investment and professional training) is estimated at €308 for each individual dose (or ‘fraction’) in lower-middle income countries and €704 per fraction in high-income countries [Atun et al. 2015].

Thereafter, operating costs (including capital depreciation) range from $60–$86 (€53–76) per 3D-conformal radiotherapy fraction in lower-middle income countries and $235 (€207) in high-income countries (here allowing a mix of conformal and intensity-modulated fractions) [Atun et al. 2015].

In Belgium, the average cost of a course of radiotherapy for the major cancer indications is €4,266 – this includes equipment, materials, personnel and overheads [Hulstaert et al. 2013]. Note: average costs for each modality are also given for each cancer type, e.g. lung, breast, prostate.

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**COST EFFECTIVENESS**

New radiation therapy modalities (such as intensity modulated radiotherapy, stereotactic body radiation and proton therapy) are generally cost-effective compared with less advanced radiotherapy technologies, with incremental cost-effectiveness ratios (ICERs) usually below commonly accepted thresholds for cost-effectiveness (i.e. less than €50,000 per quality adjusted life year [QALY] gained) [Lundkvist et al. 2005; Konski et al. 2006; Sher et al. 2011; Amin et al. 2014].
→ Modified, accelerated radiation oncology schemes, deliverable with new technologies, offer the potential to further reduce the cost and improve the cost-effectiveness compared with conventional schemes [Ramaekers et al. 2013; Hulstaert et al. 2013].
→ Optimal positioning of radiation oncology in care models would be expected to improve cost-effectiveness, value and sustainability, while also improving patient outcomes.
→ Further research into the cost-effectiveness and value of radiation oncology is essential to support the introduction of innovative modalities.
→ When assessing and optimising the cost-effectiveness of cancer care, decision-makers should consider how service redesign might contribute to improved care and costs savings [Simons et al. 2015], and thereby support investment in radiation oncology services.
Innovation in radiation oncology

The limited knowledge of radiation oncology among many health policymakers can result in under-recognition of the innovation that continues to drive improvements in care and patient outcomes.

ESTRO recommends the following key messages regarding the value of innovation in radiation oncology.

➡️ Research is continuing to refine radiation oncology technologies, techniques and processes, to allow even more patients to benefit from effective, precise and safe treatment and to further improve the cost-effectiveness of therapy.

➡️ Research is needed to define how radiation oncology can best be combined with medical oncology treatments (such as chemotherapy and novel targeted therapies) and surgery in patient-centred care models that allow even more patients to be cured of cancer.
Access and sustainability of radiation oncology services

Radiation oncology is a cornerstone of modern cancer treatment, and yet important variations and deficiencies in access to radiation oncology services exist in Europe [Grau et al. 2014; Lievens et al. 2014; Borràs et al. 2015]. The main barriers to access are:

1. Resourcing, i.e. staffing, training, equipment and associated infrastructure
2. Inefficient positioning of radiation oncology in care models, linked to a lack of recognition among many physicians of its evidence-based role in cancer care, and a resulting bias against its use, along with a limited understanding of radiation oncology among patients.
3. Reimbursement strategies that underestimate the cost-effectiveness of high-technology radiation oncology treatments and which de-incentivise the use of radiation oncology.

ESTRO recommends the following key messages regarding the current problems with access to radiation oncology services and the investment that is necessary to ensure that as many people as possible receive the radiation oncology indicated for their cancer.

ACCESS TO RADIATION ONCOLOGY

→ Every cancer patient in Europe should have access to state-of-the-art radiation oncology treatment, as part of a multidisciplinary approach whereby treatment is individualised for the specific patient’s cancer and circumstances [Valentini et al. 2012].

→ All patients are entitled to access healthcare systems that enable the highest quality radiation oncology delivered within a safe healthcare environment, and on completion of treatment to have access to appropriate long-term follow-up, advice and support from members of the clinical radiation oncology team [Valentini et al. 2012].

→ Across Europe, around half of all patients diagnosed with cancer would benefit from radiation oncology at some point during their treatment [Borràs et al. 2015].

→ However, many patients who should receive radiation oncology do not receive it. The HERO study revealed large discrepancies between the actual utilization and the optimal utilization of radiotherapy in Europe [Borràs et al. 2015].

• On average, across European countries with available data, radiation oncology is provided to only 74.3% of patients who optimally should receive it [Borràs et al. 2015]. Hence, a quarter of cancer patients do not receive the radiation oncology treatment they need.
• Only one in six surveyed countries provided radiation oncology to at least 80% of patients who should receive it [Borràs et al. 2015].
• In almost half of countries, radiation oncology did not reach 70% of the patients who should receive it [Borràs et al. 2015]. (Infographic 3: Access to radiation oncology – the ESTRO HERO study)
Radiation oncology is an essential part of modern cancer treatment — optimally, **51% of all cancer patients in Europe should receive radiation oncology** at some point in their disease [Borràs et al. 2015].

The ESTRO Health Economics in Radiation Oncology (HERO) study revealed **large discrepancies between the actual and optimal utilization of radiation therapy in Europe** [Borràs et al. 2015].

On average, across European countries with available data, **radiation therapy is part of the treatment in 74.3% of patients who optimally should receive it** [Borràs et al. 2015]. Hence, a quarter of (or ‘one in four’) cancer patients do not receive the radiation therapy they need.

Only **17% of surveyed countries (approx. 1 in 6) provided radiation therapy to at least 80% of patients who should receive it** and in 46% of countries, radiation therapy did not even reach 70% of the patients who should receive it [Borràs et al. 2015].

**INVESTMENT IN RADIATION ONCOLOGY**

→ Spending on radiation oncology services is currently disproportionately low relative to its critical role in optimal cancer care.
  - Although radiation oncology is a cornerstone of cancer care, it currently accounts for only 5% of total cancer spending [Norlund et al. 2003; Royal College of Radiologists 2015].
  - Across Europe, outpatient cancer costs – including radiation oncology – account for 11% of total healthcare spending on cancer, less than half the amount spent on anticancer drug therapy (27%) [Luengo-Fernandez et al. 2013] (Infographic 4: Investment in radiation oncology).

→ Investment in radiation oncology, together with other cancer services, is necessary if lives are to be saved. As the GTFRCC has concluded in global terms: “In view of the role of radiation oncology in cancer control, the case for investment is paramount” [Atun et al. 2015].

→ Investment in radiation oncology services is vital to optimise the efficiency and sustainability of high-quality cancer care services.
  - Data on the return on investment in radiation oncology services in Europe are lacking. However, the GTFRCC recently concluded that, from a global perspective, scaling up radio oncology services to meet demand is not only feasible and affordable, but should offer a positive return on investment by 2035 [Atun et al. 2015].
Spending on radiation therapy services is currently disproportionately low relative to its critical role in optimal cancer care.

➔ Nationally, radiation oncology accounts for only 5% of total cancer spending [Norlund et al. 2003; Royal College of Radiologists 2015].

➔ Across Europe, outpatient cancer costs – including radiation therapy – account for €5.4 billion/year, which is 11% of the total €51.0 billion healthcare spend on cancer (2009 data). This is less than half the amount spent on anticancer drug therapy (€13.6 billion, or 27% of the total healthcare spend) [Luengo-Fernandez et al. 2013].

ESTRO estimates that the need for radiation oncology services in Europe will increase by 16% from 2012 to 2025. The expected changes in demand vary considerably between countries (range 0–35%). The cancers driving the greatest need for increased radiation oncology services are prostate, bladder and myeloma cancers [Borràs et al. 2016].

Return on investment in radiation oncology services: the GTFRCC estimated a net benefit of between €44 billion and €251 billion in upper middle income countries by 2035 (depending on the model used), representing a return on investment of between 0.5% and almost 6% [Atun et al. 2015].

• For example, the GTFRCC estimated a net benefit of between US$50 billion (€44 billion) and US$285 billion (€251 billion) in upper middle income countries by 2035 (depending on the model used), representing a return on investment of between 0.5% and almost 6% [Atun et al. 2015]. (Infographic 5: Global radiation oncology: the GTFRCC study)

• Globally, “investment in radiotherapy not only enables treatment of large numbers of cancer cases to save lives, but also brings positive economic benefits” — GTFRCC, 2015 [Atun et al. 2015]

• Globally, “Investment in radiotherapy can not only save millions of lives and prevent the needless suffering of millions more, but also allow those who would otherwise die to continue to contribute to economic growth” — GTFRCC, 2015 [Atun et al. 2015]

➔ Radiation oncology services require a large upfront investment, but the investment timescale is long and the benefits are realised over 10–15 years. The subsequent operational costs of radiation oncology are predictable and very low relative to the initial investment [Atun et al. 2015].

➔ The need for radiation oncology services will rise with the increasing burden of cancer in Europe.

• ESTRO estimates that the need for radiation oncology services in Europe will increase by 16% from 2012 to 2025. The expected changes in demand vary considerably between countries (range 0–35%). The cancers driving the greatest need for increased radiation oncology services are prostate, bladder and myeloma cancers [Borràs et al. 2016].

• The GTFRCC has estimated that 8 million additional fractions/year will be needed across the European Union (plus Norway and Switzerland) by 2035 [Atun et al. 2015].
Long-term planning for radiation oncology staffing and infrastructure should be based on the latest country-specific estimates of current and forecasted demands: the projections of new cancer patients requiring radiotherapy are useful to assess the impact on radiotherapy services by country and type of tumor. Moreover, a broader view and inclusion within the framework of a national cancer control plan is of paramount importance. [Borràs et al. 2016].

**POSITIONING RADIATION ONCOLOGY IN CARE MODELS**

- Radiation oncology should be positioned within patient-centred care models according to the latest evidence-based clinical guidelines.
- Patients should receive the optimal treatment according to a neutral assessment that takes the curative value of radiation oncology into account.
- Policies for the reimbursement of radiation oncology services should be aligned with patient-centred, evidence-based decision-making.

**INFOGRAPHIC 5: GLOBAL RADIATION ONCOLOGY: THE GTFRCC STUDY**

Globally, radiotherapy is the treatment of choice for **over 7 out of 10 patients with cancers of the breast, head and neck, lung or oesophagus** [Atun et al. 2015].

Globally in 2012, **more than 580 000 people** would derive a **survival benefit** from radiotherapy if all patients needing radiotherapy had access — this is estimated to rise to 950 000 by 2035 [Atun et al. 2015].

Globally, the one-time, upfront cost to establish new radiation oncology capacity (covering start-up investment and professional training) is estimated at €308 for each individual dose (or ‘fraction’) in lower-middle income countries and €704 per fraction in high-income countries [Atun et al. 2015]. Thereafter, **operating costs** (including capital depreciation) **range from $60–$86** (€53–76) per 3D-conformal radiotherapy fraction in lower-middle income countries and **$235** (€207) in high-income countries (here allowing a mix of conformal and intensity-modulated fractions) [Atun et al. 2015].

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IMPLEMENTING A RADIATION ONCOLOGY ADVOCACY CAMPAIGN

Introduction

Stakeholder mapping

Policy audit

Events and opportunities for engagement

Matching your message to your audience

Alliance and partnership building

Tips and tricks for outreach

UNMET NEEDS

KEY ADVOCACY MESSAGES AND RESOURCES

IMPLEMENTING A RADIATION ONCOLOGY ADVOCACY CAMPAIGN
WHAT IS ADVOCACY?

Advocacy is an active process that uses strategic actions to bring about change in institutional policy and practice, public opinion and behaviour, and public health priorities. It is about building a strong case for action and finding common ground with other stakeholders. Advocacy work may target policymakers at European or national level, health institutions, or related stakeholders such as other civil society or professional organisations. Effective advocacy includes: providing information, education, raising awareness of unmet needs, and proposing solutions. The aims of advocacy can be achieved using a variety of channels, including position papers, stakeholder roundtable discussions, parliamentary debates, policy symposia, media articles, and social media.

A good advocacy programme must start with careful planning. This section of the toolkit provides practical guidance to design and implement a radiation oncology advocacy campaign at national level.
Stakeholder mapping

The first step for an advocacy programme is an audit of the key stakeholders and their representative organisations, together with the challenges and priorities of these groups.

One important aim of radiation oncology advocacy is to facilitate cooperation with health organisations to address areas of common interest linked to cancer care, facilitating exchange of information between cancer and chronic disease communities, institutions and organisations in charge of health policy throughout the EU.

The ultimate aim of the advocacy programme is to cascade European-level recommendations to national stakeholders in order to stimulate local debate on access to radiation oncology and eventually influence the creation of country-specific policies and actions.

National stakeholders you should consider for outreach include:
→ National organisations of patients and professionals
→ Health system managers
→ Public health bodies
→ Health education, research, and other relevant ministry officials
→ Members of Parliament (MPs).

European stakeholders of importance include:
→ EU Patient advocacy groups
→ European professional societies/organisations
→ European Commission officials
→ Members of the European Parliament (MEPs)
→ EU Member States Representations.
Policy audit

Advocacy can be used to positively shape the cancer care environment by engaging in the policy debate. However, it is important to first understand which policies are in place at both national and EU level, and how they can and do influence the field of cancer care in general and radiation oncology in particular.

It is equally important to understand how the EU institutions, and national governments and health authorities function, and what the decision-making timeline is for each relevant policy opportunity.

An audit of all relevant national and EU policy initiatives should be undertaken to produce a map of opportunities. A first step is to determine whether your country has an updated cancer strategy or action plan as per the European Code Against Cancer (revised in 2014, and the EU Joint Action CANCON (Comprehensive Cancer Control, 2014) to structure actions within national health systems and to improve cooperation between EU Member States.

Policy areas of relevance include:
→ Cancer
→ Innovation in care
→ Chronic disease / multi-morbidities
→ Cross-border healthcare
→ Health inequalities
→ Health technology assessment
→ Sustainable health systems
→ Cancer research agenda.
Events and opportunities for engagement

An excellent way to harness existing momentum for building awareness and solidifying a community around the inclusion of radiation oncology in best practice cancer treatment is to use the occasion of a cancer awareness event that already has a high profile or which gathers some of your key stakeholders.

Some ideas include:
- ESTRO events
- World Cancer Day: 4 February
- European Week Against Cancer: 25–31 May
- European Cancer Patient Coalition events
- Events of national patient groups or foundations
- Events of national radiation oncology societies
- ECCO annual meeting.
Matching your message to your audience

Advocacy should be targeted toward clear goals, delivered using key messages, and assessed using appropriate markers of success.

You should use the key messages and target audiences included in this toolkit to guide the development of your national and local advocacy plans. It is important to link the right message with the target audience to have the greatest chance of success.

Key Messages

These core messages should be tailored to reflect the local reality of radiation oncology in your country and the fundamental challenges that need to be solved. Such messages should be supported where possible by the latest local data and case examples.

KEY AUDIENCES

→ Policymakers: Change will require the attention of, and action by policymakers such as:
  • Members of Parliament (MPs)
  • Health ministry officials
  • Public health bodies.

→ Patients: patient advocacy groups are key audiences, as radiation oncology serves patients and improving patient outcomes is the ultimate goal of the advocacy programme. Patient-centricty is an increasingly important element of policy decision-making.

→ Industry: Individual manufacturers and industry associations are also important stakeholders with whom collaboration could be envisaged.

→ Other important stakeholders for outreach and collaboration include:
  • cancer care / public health organisations and partnerships.
  • Societies of other healthcare professionals
  • hospital management organisations and health insurers
  • press (both policy oriented and popular-scientific press).

TIPS FOR A GOOD MATCH:

→ Try to ensure that the messaging used in any correspondence links to current national political goals/concerns or on-going policy debates.
→ Try to use similar language to that used by your targeted audience.
Alliance and partnership building

Engagement with stakeholders is crucial to build partnerships that can communicate a strong and united message about radiation oncology to healthcare policy-makers. This collaboration is important to build support for your national-level action.

KEY STEPS FOR SUCCESSFUL PARTNERSHIP-BUILDING

- Contact relevant cancer stakeholders in your country, identified by the stakeholder mapping exercise.
- Seek an initial meeting to understand their objectives and plans, and to share your goals and ideas.
- Understand where your objectives overlap with the objectives of your partners and agree on areas of mutual interests where you could work collaboratively in pursuit of shared goals. Successful collaborations are those that focus on areas of mutual interest. It does not matter if you are coming to the table from different aspects of an issue, as long as the differences are understood and the common ground agreed. Be sure to keep your ultimate aim in mind. It will then be important to determine who are the right partners for each of your objectives.
- Identify potential activities you could develop in partnership.
- Identify and agree on key national and regional government officials and other health influencers to target.
Tips and tricks for outreach

GUIDELINES FOR OUTREACH TO PATIENT GROUPS
Patient groups are an essential part of the stakeholder mix and have an increasingly strong share of voice and influence with policy makers. Therefore it is essential to include a representative or representatives from appropriate cancer patient groups in your coalitions and alliances.

Below is a selection of examples of projects or activities on which you might consider partnering with a patient group:

→ Surveys
Providing resources to enable a cancer patient group to commission a survey on access to radiation oncology could be an effective way to gather data, highlight an unmet need or capture patient experiences or views. The outputs of a survey can be used to form the basis of a campaign to influence policy.

→ Case studies
Consider working with patient groups to provide testimonies to articulate experiences and improved outcomes with radiation oncology. A good patient case study illustrates the human face, day-to-day realities and psycho-social toll of their experience with cancer treatment. It is one of the most powerful ways of getting your message across to your key audiences.

→ Educational and information materials
Consider building a partnership between a cancer patient group and a radiation oncology society to produce educational materials to help promote awareness and educate patients and family members about the benefits of radiation oncology. Other medical societies, not necessarily in the oncology field, have already created very important and active partnerships with their patient groups. ESTRO recommends to liaise with these societies to learn from their experience and get best practices in involving the patients.

→ Visual case studies
Patient photographs and short statements can be used on exhibition panels that can be used in social media, or at parliamentary events, stakeholder roundtables and other policy meetings. They can also be used in reports and other documents to show the human face of radiation oncology.

→ Newsletters and websites
Cancer patient group websites and newsletters are a good way to keep information flowing about advances and benefits of radiation oncology to the patient group’s members. Audiences for the websites and newsletters can include, but are not limited to:
- Cancer patients
- Caregivers
- Families of patients
- Policy-makers and government officials
- Healthcare providers.

→ Testimonials
For example, these may include testimonials about RO treatment from well-known individuals in public life. It is important to thoroughly investigate on the veracity of such testimonials before engaging with these sources!
GUIDELINES FOR OUTREACH TO POLICY-MAKERS
The following steps should be taken when planning an outreach programme towards key decision-makers:

1. Carry out preliminary research and understanding of key influencers and partners, and relevant policy priorities and programmes (stakeholder and policy mapping).
2. Define treatment access objectives in your country (e.g. an increase in number of professionals trained, changes to reimbursement policies, better positioning of radiation oncology in multidisciplinary care pathways, increase in number of treatment units and the replacement of the old ones, aiming toward state-of-the-art radiation oncology).
3. Gather facts and figures on uptake of radiation oncology and cancer care pathways.
4. Identify allies and decision-maker target list.
5. Define your key messages based on latest data, facts and figures.
6. Identify types of activities you can suggest to decision-makers to aid awareness.

Below is a list of institutions responsible for health policy with whom you might consider engaging with, both independently and in partnership with other cancer stakeholders. Together, you should aim to leverage the key messages to drive improvements in patient access to radiation oncology.

- National Health Ministry, cancer responsible officials
- Regional Health Authority, cancer responsible officials
- National Institute of Public Health, cancer responsible officials
- National Members of Parliament interested/responsible for health
- MEPs
- MEPs specifically involved in the cancer debate e.g. MEPs Against Cancer
- Representatives from the European Commission Health Directorate (DG SANTE).
- National regulators, HTA agencies and budget holders.

GUIDELINES FOR PARLIAMENTARY ACTIVITIES
Parliaments are directly elected by citizens and therefore constitute a strong vehicle to strive for better healthcare services and address disease-specific issues. In particular, the European Parliament has always been an important voice in the cancer debate. National Parliaments should also be considered as a central player and a platform to raise awareness of cancer treatment, in particular the benefits of radiation oncology, to put it higher on the cancer agenda nationally, and to put pressure on the government to change policy.

How to table Parliamentary questions
Parliamentary questions are tools that can be used by MPs to seek information or to push for action. They oblige ministers to explain and defend the work, policy decisions and actions of their departments. Parliamentary questions should therefore be used as a tool to drive further debate on cancer treatment and point at existing gaps in access to radiation oncology.

When encouraging an MP to table questions, these steps should be followed:

- Target MPs who are likely to be interested in cancer treatment (e.g. MPs in the health committee or who have a medical background — this can be found by checking their CVs, which are usually available on Parliament websites).
- Draft a letter to the targeted MPs presenting your organisation, subject of your request and issue you would like to present.
- Request a meeting with the MPs to further brief them about the gaps in access to optimal cancer care (or radiation oncology specifically) and the impact on patient outcomes and costs.
Following a successful meeting, the MPs will either draft the question, or ask you to prepare a first draft question for his/her consideration.

You should be aware of specific rules and deadlines applying to the submission (or tabling) of Parliamentary questions, which may be found on the Parliament webpage.

**Policy Roundtables and Parliamentary events**

A policy roundtable, in collaboration with key stakeholders, is a platform for discussion and exchange of information on a subject of interest. Most on-going roundtables meet for example once a year, each time with a different topic with an overarching aim of improving a situation and/or environment by tackling key challenges as they arise. The prestige and level of the roundtable of course depends on the balanced choice of participants. Policy roundtables aim at slowly shaping certain priorities and beliefs held by decision-makers with the view to gather consensus around a specific issue. Topics could be built key recommendations and will serve to fuel the debate on:

- Improving understanding of best practices in cancer care, including access to oncology radiation
- Development of a nationally co-ordinated, multidisciplinary approach to cancer care in collaboration with other oncology professionals, cancer patient groups and other stakeholders
- Advancing cancer care through innovation.

The following steps can be undertaken when planning a Policy Roundtable or Parliamentary event in collaboration with key stakeholders:

1. Determine the best stakeholders with whom to partner for the event.
2. Work together to develop the topic and key messages for the event.
3. Secure a host MP (if the event is to be held in Parliament) who has shown interest in cancer treatment.
4. Determine what type of event fits your purpose?
   - Parliament event/conference
   - MP lunch/dinner
   - Patient stories presentation
   - On-line discussion or other activity.

**GUIDELINES FOR OUTREACH TO GENERAL PRACTITIONERS AND OTHER SPECIALISTS/SOCIETIES**

Radiation oncology often suffers from a lack of recognition and understanding among health stakeholders of the medical discipline of radiation oncology and its importance and benefits. Health stakeholder groups of particular importance to engage with in this context include general practitioners and specialists medical societies.

Key steps for successful partnership-building include:

- Identify relevant general practitioners and specialist societies in your country (if they are not part already of the initial stakeholder mapping exercise).
- Seek an initial meeting to understand how/if they are/have been working with cancer groups and identify how mutually beneficial collaboration can be envisaged.
- Agree on areas of mutual interests where you could work collaboratively in pursuit of shared goals.
- Identify potential activities you could develop in partnership.
The following examples of projects or activities might be considered when partnering with general practitioners and specialists societies to foster the recognition of radiation oncology:

- Convene a multi-specialist roundtable with representatives of relevant medical societies to whom you want to communicate the key messages about radiation oncology and establish or strengthen collaboration on areas of mutual interests.

- Identify opportunities for collaborative communications, e.g. editorial/commentary journal articles or congress speaking opportunities.
REFERENCES


Royal College of Radiologists. How the next government can improve services for cancer patients. Four proposals from the Royal College of Radiologists, 2015


