



INTERACT EUROPE

Deliverable 2.2 – Training needs assessment report

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Abstract: INTERACT-EUROPE brings together 33 partners from 17 countries aiming to develop a European inter-specialty cancer training programme involving all main oncology disciplines and professions, cancer centres and patient groups, based on relevant needs assessments. The project will foster a patient-centric approach to quality cancer care through the promotion of multi-disciplinary and multi-professional team working.

This document reports on the comparison of the existing curricula in each specialty and the analysis of the Inter-specialty Cancer Training Needs. The analysis has three components:

- A scoping review of the literature on interprofessional education in oncology
- A comparison of specialty curricula used to develop a quantitative survey that investigated the competences patient advocates, trainees and clinical experts thought were valuable in achieving the aims of the inter-specialty cancer training programme.
- A qualitative survey exploring participants' understanding and previous experience of inter-specialty training and why they thought it was valuable.

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Introduction

This document reports on the comparison of the existing curricula in each specialty and the analysis of the Inter-specialty Cancer Training Needs.

The Inter-specialty Cancer Training Needs Analysis has three components:

- A scoping review of the literature on interprofessional education in oncology;
- A comparison of specialty curricula developing a quantitative survey that investigated the competences patient advocates, trainees and clinical experts thought were valuable in achieving the aims of the inter-specialty cancer training programme;
- A qualitative survey exploring participants understanding and previous experience of inter-specialty training and why they thought it was valuable.

Scoping Review

1.1 Aims and Objectives

The objective of the scoping review was to understand the extent and type of evidence in relation to interprofessional education (IPE) in oncology. The aim was to identify how IPE has been defined and methodology underlying the implementation of the IPE.

The questions guiding the scoping review were:

- How inter-specialty and interprofessional education and training has been defined in previous research in the oncology setting
- What competences have been used to guide the development of curricula in IPE in oncology
- What teaching and learning methods, including assessment have been used in previous studies

1.2 Methods

A systematic review of the databases CINAHL, MEDLINE (Ovid), PubMed, PsycInfo, Scopus was performed with PICO questions.



PICOs: P(articipants)= oncology medical professionals (medical oncologist, radiation oncologist, oncology surgeon) and nurses, C(oncept)= inter-specialty or interprofessional education or programmes, C(ontext)= Cancer care setting

700 references were screened with 24 references being included in the review (Figure 1).



Figure 1. Data Retrieval Flow Chart

1.3 Result summary

The analysis was conducted by three researchers. Prepared worksheets were used to extract the data. Results of the data extraction are available in Annex 1. In the reviewed studies and literature reviews the main concepts were weakly defined. Concepts used were interprofessional education and collaboration, interprofessional learning, team training and interdisciplinary education. Only 5 out of 24 papers contained a description or definition of these concepts. Inter-specialty training was not used as a concept. This indicates that definition of inter-specialty training needs to be provided in the article on curriculum development and final curriculum.

Teaching and learning methods were quite traditional, thus variety of methods were used. Methods included lectures, case studies, interactive workshops, audio-visual materials, simulation exercises and work shadowing. The content, focus and learning goals of IPE were very variable between the studies and reviews. Evaluation of the education projects was guided by Kirkpatrick's (1994) framework in two papers (McLeod et al., 2014; Topperzer et al., 2019).

Results are presented below as a word cloud (Figure 2).



Figure 2. Word Cloud

Competencies guiding the curriculum/ education interventions in the reviewed papers were related to communication, teamwork, interprofessional collaboration, safety, psychosocial support, well-being at work. Competency was divided on two papers on knowledge, skills, attitudes/abilities. In one paper the competence framework (Esplen et al.) competencies were set to three different levels (Early Learner/ Novice Practitioner, Advancing Practitioner and Expert Practitioner).

In the paper by Esplen et al. 2020, a shared set of competences in oncology practice were identified as: Interprofessional collaboration; Recognition of the biopsychosocial and spiritual impact of cancer and the underpinnings of a person living with cancer; Foundational understanding of the cancer experiences and the cancer journey; Person-centred care, including symptom recognition, referral process, and resources; Communication skills to address the needs of patients, families, their networks, and their health care members; Regular review of competencies, including evidence-based new knowledge and the use of technology in care delivery and Awareness of one's own limits and ability for self-care.

The assessment methods mostly used in evaluation of the impact of education interventions were knowledge tests, program satisfaction/ feedback surveys, behaviour change, confidence, comfort, intention to change practice, self-assessment of preparedness, observation and patient incidence reports.

The following previously validated instruments were used: Readiness for Interprofessional Learning Scale RIPLS, UWE Entry Level Interprofessional Questionnaire (UWEIQ), Trainee Test of Team Dynamics and Assessment of Cultural competence using the Intercultural Development Inventory, Frommelt Attitudes Toward Caring of the Dying, Attitudes Toward Health-Care Teams Scale, and Attitudes Toward Interdisciplinary Learning Scale.

As a conclusion, based on the review, learning scenarios to be tested in the later stage of the project could have a focus on competencies related to interprofessional practice, team work and communication. The Blended learning approach fits well on IPE and methodological approach could be a combination of eLearning and simulation pedagogy. The context could include patient scenarios from palliative care/pediatric oncology/gero-oncology/ psycho-oncology/symptom management with special focus on cultural diversity, survivorship care responding patients psychosocial needs /emotional support and /or well-being at work/safety. It would be recommended that existing previously developed instruments are used to evaluate the impact of educational intervention.

The results are used to verify the inter-specialty competences and to identify learning scenarios to be developed for the pilot. Manuscript is under preparation and will be submitted to a scientific journal for peer review and potentially for publishing.



Quantitative Survey

1.4 Aims

The quantitative survey aimed at answering the question, “What is it valuable for trainees to learn in order to work more effectively with different specialties and professions to deliver better care and to provide psychosocial and nutritional support for cancer patients?” It also addressed whether the stakeholder community, including patient advocates, medical and nursing specialists and trainees, thought that inter-specialty training was valuable.

1.5 Methods

The following curricula and documents were reviewed:

- Interdisciplinary training for cancer specialists¹
- ESSO core curriculum committee update on surgical oncology²
- ESTRO core curriculum for radiation oncology/radiotherapy 4th edition³
- Clinical oncology module for the ESTRO core curriculum⁴
- European training curriculum for radiology⁵
- EONS cancer nursing education framework⁶
- Leader role curriculum for radiation oncology⁷
- European training requirements for the specialty of medical oncology⁸
- Royal College of Nursing career pathway and education framework for cancer nursing⁹
- European Code of Cancer Practice¹⁰

Additional competences were added to this by a representative of the European Cancer Organisation’s Patient Advisory Committee.

Competences from these documents and papers that might be relevant were extracted and the list was revised by WP2 which includes a patient advocate. These competences were structured according to the CanMEDS 2015 framework¹¹ with 13 Entrustable Professional Activities, 23 competences and 126 enabling competences.

In June 2022 an online survey was sent to:

- INTERACT-EUROPE Consortium Member representatives,
- European Specialty Society Committee members e.g., education & training committees of ESTRO, EONS, ESSO, ESR (European Society of Radiology), ESO (European School of Oncology),



- Young and Trainees' Committees members of the above societies,
- European Union of Medical Specialists (UEMS) Section of Medical Oncology members,
- European Union of Medical Specialists (UEMS) Section of Radiation Therapy members,
- European Union of Medical Specialists (UEMS) Division of Surgical Oncology members,
- Members of the ECO Patient Advisory Committee.

This asked participants to score their agreement as to how valuable the competences were in enabling trainees to achieve the stated aims of the curriculum on a seven-point Likert scale. The survey contained:

- 3 statements about the value of inter-specialty training
- 126 proposed enabling competences

1.6 Results

Value of inter-specialty training

The questions addressing the value of inter-specialty training included statements on:

- the value of a period of interdisciplinary training in each of the other two disciplines for clinical/radiation oncologists, medical oncologists, and surgeons
- the value of an opportunity for cancer nurses and medical trainees to observe each other in practice consulting with patients
- the value of cancer nurses having access to interdisciplinary training

The survey revealed that participants strongly agreed with all 3 statements with a good consensus (median 7, interquartile range (IQR) 1 with 119-120 responses to each question).

1.7 Value of enabling competences

The number of respondents to the 126 questions on enabling competences ranged from 103 to 121.

- The median score for each enabling competency was 6 (agree) or greater.
- 10 enabling competences had a median 6, IQR >1.0 and <80% agreeing or strongly agreeing they were valuable. Of these
 - 6 were in the clinical expert role

- 2 were in the leader role
- 2 were in the health advocate role
- 3 of these enabling competences had <70% agreeing or strongly agreeing they were valuable.
- 10 enabling competences had a median 6, IQR 1 but <80% respondents agreeing or strongly agreeing they were valuable:
 - 6 in clinical expert role
 - 2 in communicator role
 - 2 in leader role
- 76-79% of respondents, however agreed or strongly agreed that these enabling competences were valuable.

The scores for all enabling competences, shown in Annex 1 were shared with WP2 as the basis for a discussion, as to which should be included in the curriculum. This was also influenced by the information from the scoping literature review and the qualitative survey. This will be discussed with all stakeholders at a face-to-face meeting and further revisions made.



Qualitative Survey

1.8 Data collection and analysis

A questionnaire was distributed to a variety of EU societies and 219 (55%) responses were returned. Of these 115 respondents answered the qualitative survey questions. All participants received information explaining the purpose of the project and that all responses were anonymised and stored according to GDPR. Completion and submission of the responses was regarded as the participants consent to participate in the survey. The quantitative data was analysed using descriptive statistics through the online SurveyMonkey tool. The qualitative data which consisted of eight questions (see section 1.9) was transcribed verbatim using thematic analysis¹². The transcripts were read until the project team were familiar with the content. Colours were used through Microsoft word to code after which themes emerged for discussion. This shift from coding should maintain complexity and depth, which was created through exploratory coding while also reducing the amount of data. The themes were compared, and any discrepancies were discussed in more detail with WP2. The team then conducted a cross-analysis and mapped the themes to derive overlapping concepts which then informed the curriculum.

1.9 Questions in Qualitative Survey

1. What is your understanding of inter-speciality training (IST)?
2. Why is IST necessary in caring for people affected by cancer and their family?
3. What barriers/challenges are there to accessing IST and education within your role as a healthcare professional?
4. Are there any barriers/challenges to working in an IST context?
5. Have you experienced IST improving the cancer journey for patients and their families and/or for you as a healthcare professional?
6. Describe a time when you were particularly proud of your professional healthcare team and why?
7. What was your role in that situation?
8. In your opinion, what are the three most important learnings that trainees should take away from an IST curriculum?



9. Do you have any further comments you would like to add?

*6 & 7 analysed together

Responses were analysed and classified according to the themes.

Colour	Coding Key
Green	Increase trainees' skills and knowledge for the future
Orange	Limited knowledge and experience
Red	Unaware of IST workings
Purple	Rotation across specialties
Yellow	All speaking the same language and communicating this
Violet	Anxious, worrying, fear of losing own identity
Teal	Supporting and palliative care
Grey	Motivation and job satisfaction
Dark Blue	Collaborative workings
Light Blue	Addressing the theory and practice gap
Brown	High quality patient care, good experience
Pink	Cancer is complex disease
Navy	Lack of respect and awareness of others
Dark Green	Hierarchy/prejudices/culture/policy/working in silos
Burgundy	Lack of access to resources (availability training, time, staffing, funding)

Table 1. Colour Coding Key

1.10 Emerging Themes

Theme 1: Not sure what IST is?

This theme has been developed from the codes: **RED, ORANGE**

Many healthcare professionals, especially the young medical trainees, did not know what IST is. They were unable to identify the delivery of truly integrated cancer care, bringing together specialist cancer care providers and primary care professionals, whose roles are recognised as crucial.

Theme 2: Barriers and challenges?

This theme has been developed from the codes: **GREY, BURGUNDY, VIOLET**

Many healthcare professionals identified lack of resources, time, funding, staffing and availability of training. Motivation and job satisfaction was also lacking and the desire to work in their own silos worrying that they may lose their own 'identity' or control of their patients care.

Theme 3: Open channels of communication and respect

This theme has been developed from the codes: **YELLOW, NAVY, DARK GREEN**

The language was a barrier and ensuring that the flow of communication was evident across the MDT. Many expressed that this was severely lacking.

Theme 4: Support throughout the cancer journey

This theme has been developed from the codes: **PINK, BROWN, TEAL**. Participants reflected on their own experiences of caring for people affected by cancer and how important language and communication was within the multidisciplinary team and with the patient and family. This was vital to ensure a true understanding of the patient journey and ultimately the cancer journey.

Theme 5: New way of working

This theme has been developed from the codes: **GREEN, PURPLE, DARK BLUE, LIGHT BLUE**

IST was suggested as essential but for some this was a new way of working.

This theme emerged from all having varied professional and personal experiences within a specialist cancer area of expertise. They mostly all wanted to have rotations as part of the IST curriculum.

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3. Annexes

Annex A: Competences from Survey for Discussion

Median 6, Interquartile Range>1

Note all of these competencies had <80% respondents agreeing or strongly agreeing regarding their value.

	Median	Interquartile range	Role	% agreeing or strongly agreeing
Understand the terminology for high-throughput Omic technologies, including genomics, proteomics, transcriptomics, epigenomics and metabolics	6.00	2.00	Clinical expert	73
Understand the relative costs of the various imaging examinations in oncological imaging	6.00	2.00	Clinical expert	62
Discuss the implications of hereditary gene mutations on the management of a patient	6.00	2.00	Clinical expert	73
* Know who to refer to for legal issues such as employment, financial issues such as insurance and family issues such as international travel and holidays	6.00	2.00	Clinical expert	74
Discuss the role of radio frequency ablation and cryotherapy in the management of metastases	6.00	2.00	Clinical expert	74
Support and give advice to families and carers following death outlining theories of loss, grief and bereavement and how these are applied in clinical practice	6.00	2.00	Clinical expert	73
Discuss factors involved with resource stewardship including financial and other costs of cancer patient care and describe local and international guidelines and initiatives to promote resource stewardship including initiatives which bring about increased efficiency in cancer care focusing on what is important to the patient while not sacrificing quality	6.00	2.00	Leader	74

	Median	Interquartile range	Role	% agreeing or strongly agreeing
Describe leadership theories and styles and how these may apply in practice	6.00	1.25	Leader	64
Describe the occurrence and distribution of the most common cancers with a focus on Europe	6.00	2.00	Health Advocate	69
Provide appropriate and individualised evidence-based verbal and written information regarding the benefits and risks of screening for cancer to people affected by cancer	6.00	2.00	Health Advocate	74

Note that there were no competences falling into this category from the Communicator, Collaborator, Scholar or Professional roles.

*Competency suggested by patient advocacy group

<80% Respondents Agreeing or Strongly Agreeing Regarding Their Value, Median 6, Interquartile Range 1

	Median	Interquartile range	Role	% agreeing or strongly agreeing
Describe indications and contraindications and radiation burden of imaging modalities and the optimal imaging strategy for staging and response assessment based on the imaging anatomy and pathways of spread for the common cancer types	6.00	1.00	Clinical expert	79
Discuss paraneoplastic syndromes and their management	6.00	1.00	Clinical expert	78

	Median	Interquartile range	Role	% agreeing or strongly agreeing
Discuss the scheduling of systemic anti-cancer therapy, radiotherapy and surgery in those cancers treated with combined modality therapy including the use of combined medical and surgical oncology treatments such as cytoreductive surgery and HIPEC and isolated limb perfusion	6.00	1.00	Clinical expert	78
Know interactions between food and systemic anti cancer therapies	6.00	1.00	Clinical expert	78
Demonstrate awareness of the range of services and professionals including statutory, voluntary and charitable organisations, available to support people affected by cancer and refer appropriately to meet the individual need of people affected by cancer	6.00	1.00	Clinical expert	76
Demonstrate awareness of the legal importance of living wills and advance directives and how these may be arranged by patients	6.00	1.00	Clinical expert	76
Discuss the theory underpinning communication skills	6.00	1.00	Communicator	79
Discuss their beliefs regarding alternative and complementary therapies	6.00	1.00	Communicator	77
Discuss prioritisation of patients on waiting lists	6.00	1.00	Leader	76
Demonstrate awareness of the roles and organisational structures of relevant professional societies	6.00	1.00	Leader	77

ANNEX B: Desirability of Inter-specialty Cancer Training Programme

	Median	Interquartile Range	Mean	Standard Deviation
It is valuable to recommend that a period of interdisciplinary training, in each of the other two disciplines, be mandated for all trainees in the specialties of 1) medical oncology 2) surgical oncology/cancer surgery and 3) radiation oncology/clinical oncology	7.00	1.00	6.33	1.05
It is valuable for cancer nurses and medical trainees (in clinical oncology, medical oncology, radiation oncology, radiology, surgical oncology/cancer surgery) to have the opportunity to observe each other in practice consulting with patients	7.00	1.00	6.38	0.90
It is valuable to recommend that cancer nurses have access to interdisciplinary training	7.00	1.00	6.42	0.92

ANNEX C: Value of Competences for Inter-specialty Cancer Training Programme

The following tables show the median, interquartile range (IQR), mean and standard deviation (SV) for the enabling competences.

Note: -blue- Median 6, IQR 1, <80% agree or strongly agree

-red- Median 6, IQR>1, <80% agree or strongly agree

Entrustable Professional Activities, Competences and Enabling Competences

Clinical Expert

- 1) Work constructively with other professions and specialities to develop a management plan for patients with a cancer diagnosis
- 2) Work constructively with other professions and specialities to implement a treatment strategy
- 3) Work constructively with other professions and specialities to develop and implement a management plan for survivorship

		Median	Interquartile range	Mean	Standard deviation
Contribute effectively to tumour board discussions	Explain the pathological factors that determine treatment decisions including prognostic and predictive biomarkers including cytogenetic and molecular biomarkers and the most common targetable mutations and associated targetable therapies	6.50	1.0	6.25	1.05
	Understand the terminology for high-throughput Omic technologies, including genomics, proteomics, transcriptomics, epigenomics and metabolics	6.00	2.00	5.85	1.14
	Describe indications and contraindications and radiation burden of imaging modalities and the optimal imaging strategy for staging and response assessment based on the imaging anatomy and pathways of spread for the common cancer types	6.00	1.0	6.13	0.98

		Median	Interquartile range	Mean	Standard deviation
	Understand the role of imaging in treatment planning e.g., surgery, radiotherapy	7.0	1.0	6.48	0.77
	Be familiar with the wide range of interventional techniques used in oncological radiology and their potential risks and complications	6.0	1.0	6.29	0.80
	Understand the relative costs of the various imaging examinations in oncological imaging	6.00	2.00	5.69	1.10
	Apply national or international guidelines and research evidence to the management of an individual patients	7.0	1.0	6.57	0,70
	Analyse clinical reasoning processes demonstrating understanding of cognitive bias, human factors and diagnostic error	6.0	1.0	6.25	0.69
	Discuss the implications of hereditary gene mutations on the management of a patient	6.00	2.00	6.00	0.96
	Discuss paraneoplastic syndromes and their management	6.0	1.0	6.03	0.93
	Describe the different types of radiotherapy, their mechanisms of action, dosing and administration	6.0	1.0	6.13	0.86
	Describe the role of radiotherapy in the treatment of cancer either offering a significant improvement in local recurrence thereby impacting on disease free survival and overall survival or improving symptoms	7.0	1.0	6.43	0.65

		Median	Interquartile range	Mean	Standard deviation
	Discuss the scheduling of systemic anti-cancer therapy, radiotherapy and surgery in those cancers treated with combined modality therapy including the use of combined medical and surgical oncology treatments such as cytoreductive surgery and HIPEC and isolated limb perfusion	6.00	1.0	6.11	0.99
	Discuss the role of surgery either as a primary modality in cure or palliation or in enabling other treatment modalities (e.g., placement of clips, spacers, or omentum) to enable optimal radiation treatment, outline common operations for cancer and the role of adequate margins following surgery	7.0	1.0	6.46	0.68
	Outline the interpretation of pathological response found at surgery following neoadjuvant therapies and how this may impact on the surgical outcome or the adjuvant treatment strategy	6.5	1.0	6.32	0.86
	Outline the mechanism of action of commonly used systemic therapies including chemotherapy, monoclonal antibodies, hormonal therapies, tyrosine kinase inhibitors and immune therapies	6.0	1.0	6.20	1.01
	Discuss the role of commonly used systemic therapies including chemotherapy, monoclonal antibodies, hormonal therapies, tyrosine kinase inhibitors and immune therapies in the neoadjuvant, adjuvant, curative and palliative settings	7.0	1.0	6.40	0.79

		Median	Interquartile range	Mean	Standard deviation
	Explain the criteria used to assess response to systemic therapy e.g., the RECIST criteria	6.0	1.0	6.13	0.90
	Discuss the management of a patient when there is therapeutic uncertainty, complexity, and ambiguity	7.00	1.0	6.55	0.69
	Identify when a patient should be offered the opportunity to enter a research trial (ESTRO CC 2019)				
	Justify a decision that radiotherapy, systemic therapy or surgery are not indicated due to cancer stage, performance status or comorbidities	7.00	1.0	6,55	0.71
	Discuss the role of palliative care in the management of the patient	7.00	0.0	6.72	0.59
Undertake the initial outpatient consultation	Structure the consultation effectively taking a focused history, undertaking a careful clinical examination and ordering relevant investigations to accurately diagnose conditions that may require curative, adjuvant, neoadjuvant or palliative radiotherapy, chemotherapy or surgical intervention including emergency treatment	7.00	1.0	6.58	0.74

		Median	Interquartile range	Mean	Standard deviation
	Diagnose oncological emergencies, manage them effectively or recognise when referral to another specialty or the Intensive Care Unit is indicated	7.0	1.0	6.58	0.78
	Provide people affected by cancer with evidence-based written and verbal information about the development of cancer with a view to addressing their informational and supportive care needs	7.00	1.00	6.30	0.92
	Support people affected by cancer through the diagnosis and staging process. Undertake initial and comprehensive assessments (using validated tools where appropriate) to identify people affected by cancers' informational, physical, emotional and social care needs (where relevant) during the diagnostic and staging process	7.00	1.00	6.44	0.74
	Evaluate and discuss with the patient the possible management strategies taking into account the factors related to the cancer, the patient's goals, their comorbidities and frailty and the adverse effects of possible options	7.00	1.00	6.58	0.62
	Modify approach to address pregnancy (ESTRO Clinical Oncology CC Module 2021)	7.00	1.00	6.27	0.98

		Median	Interquartile range	Mean	Standard deviation
	Explain the implications of hereditary genetic abnormalities and refer appropriately for genetic counselling (ESTRO CC 2019)	7.00	1.00	6.35	0.80
	Discuss the influence of pre-existent psychological/psychiatric illness and how to support and treat the patient (ESSO CC 2021)	6.00	1.00	6.32	0.69
	Encourage people affected by cancer to utilise appropriate local, national and/or international cancer organisations for further information, psychosocial, spiritual and/or financial support (EONS Framework 2018)	6.00	1.00	6.26	0.86
Support the patient prior to and during treatment	Understand the role of optimisation of nutrition before surgery, radiotherapy, chemotherapy and chemoradiotherapy and be aware of the importance of nutritional support if malnutrition is present in patients who may require these therapies	7.00	1.00	6.51	0.68
	Take a focused history, undertake a careful clinical examination and order relevant investigations to accurately diagnose the acute side effects of systemic therapies including chemotherapy, monoclonal antibodies, hormonal therapies and tyrosine kinase inhibitors	7.00	1.00	6.44	0.70
	Know and prevent adverse events and interactions between commonly used drugs	7.00	1.00	6.43	0.80
	Know interactions between food and systemic anti-cancer therapies	6.00	1.00	6.13	0.98

		Median	Interquartile range	Mean	Standard deviation
	Describe prophylactic strategies that can reduce and minimise the frequency and/or severity of complications/toxicities with systemic anti-cancer therapies	7.00	1.00	6.39	0.84
	Outline appropriate treatment for patients experiencing toxicities from systemic anti-cancer therapies in the acute setting	6.00	1.00	6.33	0.88
	Be familiar with the adverse events reporting system	6.00	1.00	6.21	0.84
	Take a focused history, undertake a careful clinical examination and order relevant investigations to accurately diagnose acute toxicities from radiotherapy or chemoradiotherapy and outline appropriate treatment	7.00	1.00	6.46	0.70
Manage survivorship	Develop a long-term strategy for follow up of the patient following treatment for cancer including a plan for patient specific rehabilitation and surveillance imaging	7.00	1.00	6.46	0.69
	Provide information to people affected by cancer to promote and support self-care including the role of exercise, diet, smoking cessation or alcohol as appropriate	7.00	1.00	6.58	0.65
	Know who to refer to for legal issues such as employment, financial issues such as insurance and family issues such as international travel and holidays	6.00	2.00	6.01	0.99

		Median	Interquartile range	Mean	Standard deviation
	Recognise the importance of smooth transitions such as between acute health care settings and home care, from active treatment to survival programmes, or from paediatric to adult cancer services	6.00	1.00	6.30	0.84
	Demonstrate knowledge and understanding of how cancer and therapies for this can affect teenagers and young adult including short- and long-term fertility, emotional implications, education and employment	7.00	1.00	6.42	0.72
	Educate people affected by cancer to monitor for and report signs of acute, chronic and late toxicities of cancer treatments	7.00	1.00	6.44	0.69
	Demonstrate awareness of the range of services and professionals including statutory, voluntary and charitable organisations, available to support people affected by cancer and refer appropriately to meet the individual need of people affected by cancer	6.00	1.00	5.99	0.98
	Consider the needs of younger and older patients who may not have capacity to make decisions for themselves	7.00	1.00	6.39	0.83
	Take a focused history to diagnose the common psychological sequelae following a cancer diagnosis and treatment for cancer, manage them or refer appropriately to other specialities	6.00	1.00	6.33	0.77

		Median	Interquartile range	Mean	Standard deviation
	Discuss Patient Related Outcome Measures (PROMS)	7.00	1.00	6.41	0.79
	Take a focused history, undertake a careful clinical examination and order relevant investigations to accurately diagnose the late side effects of radiotherapy, systemic anti-cancer therapies, radio chemotherapy and surgery for cancer. Discuss options for managing these and implement them or refer appropriately to other specialities	6.50	1.00	6,40	0.66
Manage patients with relapsed disease	Describe the patterns of recurrence in common cancers	7.00	1.00	6.31	0.92
	Take a careful history, perform a careful clinical examination and request relevant investigations to diagnose relapsed disease	7.00	1.00	6.54	0.61
	Take a focused history, undertake a careful clinical examination and order relevant investigations to evaluate the possible management strategies taking into account the factors related to the cancer including whether there is a possibility of curative treatment, the patient's goals, their comorbidities and frailty and the adverse effects of the possible options	7.00	1.00	6.53	0.65
	Discuss the role of radio frequency ablation and cryotherapy in the management of metastases	6.00	2.00	5.93	1.07

		Median	Interquartile range	Mean	Standard deviation
	Recognise when radiotherapy, systemic therapy and surgery are not indicated	7.00	1.00	6.63	0.71
	Discuss the role of palliative care in the management of the patient. Implement treatment to control symptoms or refer appropriately to other specialties	7.00	1.00	6.65	0.51
	Recognise the final phase of life	7.00	1.00	6.70	0.53
	Inform, support and educate people affected by cancer about palliative and end of life care where appropriate and to elicit their preferences with respect to goals of care and the transition between care aimed at cure and end of life care including appropriate discussions regarding Do not resuscitate orders or DNR	7.00	1.00	6.51	0.74
	Demonstrate awareness of the legal importance of living wills and advance directives and how these may be arranged by patients	6.00	1.0	6.06	1.07
	Undertake a holistic assessment of the needs, concerns and symptoms commonly experienced by people affected by cancer receiving palliative and/or end of life care, recognising and supporting vulnerable patients e.g., the elderly, cognitively impaired and responding to different cultural and religious perspectives	7.00	1.00	6.40	0.84

		Median	Interquartile range	Mean	Standard deviation
	Support and give advice to families and carers following death outlining theories of loss, grief and bereavement and how these are applied in clinical practice	6.00	2.00	6.11	0.97

Communicator

- 4) Communicate appropriately and effectively with patients, their relatives and carers

		Median	Inter quartile range	Mean	Standard Deviation
Build a therapeutic relationship with patients and their relatives	Discuss the theory underpinning communication skills	6.00	1.0	6.05	1.10
	Effectively utilise verbal, written and digital modes of communication to provide information, education and support in an emphatic, clear, understandable, and caring manner while maintaining confidentiality	7.00	1.00	6.42	0.65
	Assess for and address any patient-related, health care professional-related or environmental barriers to effective communication	6.00	1.00	6.28	0.75

		Median	Inter quartile range	Mean	Standard Deviation
Elicit and synthesise accurate and relevant information from patients	Select and adopt an appropriate communications approach, from a range of core communication and consultation skills, to effectively assess the informational, educational and supportive care needs of people affected by cancer throughout the cancer trajectory, reacting to body language and verbal cues with relevant observations and questions and demonstrating active listening	6.00	1.00	6.38	0.68
Develop management plans with patients and their families that reflect their health care needs and goals	Communicate clearly with patients respecting their social, political, cultural, religious and sexual standpoint	7.00	1.00	6.56	0.68
	Give clear objective information about standard treatments, clinical trials and experimental treatments including the process, side effects and risks	7.00	1.00	6.57	0.77
	Discuss the results of the investigations clearly and empathetically with the patient and their carers	7.00	1.00	6.51	0.84
	Ascertain if the patient and their families have understood the information and take effective measures if this is not the case and to assist them to access reliable sources of information including trusted websites and patient organisations	7.00	1.00	6.39	0.80

		Median	Inter quartile range	Mean	Standard Deviation
	Explain to the patient that their care is being discussed by an MDT and the nature of the decision-making process	7.00	1.00	6.47	0.76
	Discuss their beliefs regarding alternative and complementary therapies	6.00	1.00	6.02	1.17
Manage emotionally charged conversations	Take informed consent from patients and know the legal position if the patient lacks capacity	7.00	1.00	6.53	0.67
	Elicit the patient's wishes about the information they wish to receive at various stages of their journey and break bad news in an appropriate way including communicating sensitively, truthfully and without ambiguity about, for example, life with cancer, sexual issues and the dying process.	7.00	1.00	6.53	0.63
Document accurately and share appropriately information about the consultation	Disclose errors and adverse safety events appropriately	7.00	1.00	6.47	0.78
	Detail in a timely and accurate manner details of the consultation and management plan, either in a written or digital form, complying with national legislation communicating this information clearly to the health care team	7.00	1.00	6.42	0.79
	Maintain patient confidentiality	7.00	0.00	6.73	0.58

Collaborator

5) Work effectively with other health care professionals to provide safe care and to optimise the quality of treatment

		Median	Inter quartile range	Mean	SD
Work effectively across disciplinary and professional boundaries with other members of the health care professions	Contribute to effective discussions in multidisciplinary teams (MDT). Understand and value the roles of all health care professionals and encourage team working to optimise treatment. Willing to compromise to reach a consensus. Respect the views of others and the conclusions of the MDT	7.00	0.00	6.77	0.46
	Negotiate overlapping responsibilities for shared care of patients	7.00	1.00	6.35	0.82
Transfer care safely to another health care professional	Determine when care should be transferred to another physician or health care professional and facilitate continuity of care by timely, effective communication. This may include supporting patient's request for further opinions.	7.00	1.00	6.49	0.67
Support colleagues	Identify when colleagues are under pressure and offer help	7.00	1.00	6.57	0.70

Leader

- 6) Discuss the context in which they work and apply the principles of change management including quality improvement methodology in this context
- 7) Use resources appropriately
- 8) Demonstrate the ability to work in, build and lead teams

		Median	Inter quartile range	Mean	SD
Contribute to the improvement of cancer care delivery in teams and the wider health care system	Identify where quality improvements may be initiated in the work environment and demonstrate knowledge of the steps and tools that may be applied to quality improvement processes including the use of data to drive change	6.00	1.00	6.22	0.79
	Describe key quality indicators for monitoring service performance in oncology	6.00	1.00	6.32	0.71
	Assess risk and implement appropriate risk management strategies in order to promote patient well-being and safety in practice and participate in the development and implementation of patient safety initiatives	6.00	1.00	6.33	0.68
	Discuss current major challenges in health care and provide leadership in the contribution to and implementation and evaluation of policies and standards relevant to cancer care	6.00	1.00	6.21	0.76

		Median	Inter quartile range	Mean	SD
Engage in stewardship of cancer care resources	Discuss factors involved with resource stewardship including financial and other costs of cancer patient care and describe local and international guidelines and initiatives to promote resource stewardship including initiatives which bring about increased efficiency in cancer care focusing on what is important to the patient while not sacrificing quality	6.00	2.00	5.97	0.91
	Discuss prioritisation of patients on waiting lists	6.00	1.00	6.05	1.09
	Appreciate the conflict sometimes inherent between access to gold standard equitable healthcare opportunities advocate and available resources	6.00	1.00	6.11	0.89
Demonstrate elements of leadership in practice	Describe leadership theories and styles and how these may apply in practice	6.00	1.25	5.71	1.06
	Prioritise tasks including patient assessment and treatment	6.00	1.00	6.21	0.72
	Engage in developing self-awareness: strengths, weaknesses, values, behaviour drivers and impact on others	6.00	1.00	6.15	0.85
	Run effective and efficient meetings	7.00	1.00	6.45	0.67

		Median	Inter quartile range	Mean	SD
	Take responsibility for effective communication around the vision for, and purpose of, change with multidisciplinary team members, patients and other stakeholders	6.00	1.00	6,29	0.71
	Demonstrate the ability to negotiate and problem-solve with other team members	6.50	1.00	6.33	0.79
	Demonstrate awareness of the roles and organisational structures of relevant professional societies	6.00	1.00	6.06	0.89

Health Advocate

9) Advocate for cancer patient

		Median	Interquartile range	Mean	SD
Advise the patient on behaviour and lifestyle	Describe the occurrence and distribution of the most common cancers with a focus on Europe	6.00	2.00	5.75	1.09
	Understand the principles of screening, including the main advantages and drawbacks of a screening programme, and the organisation of screening using breast, lung and colorectal cancer as core examples and outline national and international guidelines in this field	6.00	1.00	6.13	0.90
	Provide appropriate and individualised evidence-based verbal and written information regarding the benefits and risks of screening for cancer to people affected by cancer	6.00	2.00	6.04	0.96
	Undertake a comprehensive history to identify the individual, familial, genetic, sociocultural, economic and environmental factors which may increase the risk for developing cancer and provide information and psychological and emotional support on strategies to reduce risk	6.00	1.00	6.11	1.01

		Median	Interquartile range	Mean	SD
	Advise the patient on relevant changes in behaviour and lifestyle prior to treatment to increase the chance of tumour response and to cope with acute toxicities e.g., smoking cessation and diet	7.00	1.00	6.44	0.80
	Advise the patient on relevant changes in behaviour and lifestyle to enable them to cope optimally with late toxicities due to previous treatment and the side effects of present medication	6.00	1.00	6.33	0.75
Support patients to navigate the healthcare system	Enable patients to access the available resources, to obtain treatment in a timely, efficient manner	7.00	1.00	6.36	0.80
	Advocate for and promote shared decision-making between people affected by cancer and their health care team regarding all stages treatment, care and management	7.00	1.00	6.39	0.68

Scholar

10) Plan personal and professional learning experiences and use them to enhance patient care

11) Contribute to the knowledge base that underpins patient care

		Median	Interquartile range	Mean	SD
Develop and follow a continuing personal and professional development plan	Assess gaps in knowledge and identify resources to meet these	7.00	1.00	6.36	0.78
	Retrieve high quality research articles and evidence-based guidelines relevant to cancer care by formulating effective research questions and utilising effective search strategies for sourcing relevant electronic and print material and critically review medical information	6.00	1.00	6.32	0.73
	Develop or revise local evidence-based guidelines integrating evidence into personal practice (ESTRO CC 2019)	7.00	1.00	6.48	0.69
Participate in research and scholarly activities	Discuss trial design	6.00	1.00	6.33	0.73
	Provide safe and effective care to patients on clinical trials in accordance with study protocols with a view to ensuring optimal	7.00	1.00	6.52	0.61

		Median	Interquartile range	Mean	SD
	outcomes and experiences for patients				
	Discuss challenges to recruit teenagers and young adults to research trials, ensuring that patient choice is considered and appropriate advice in complex and challenging situations is delivered	6.00	1.00	6.11	0.97
	Describe and contribute to health service research and clinical audit in their clinical area	6.00	1.00	6.33	0.79
	Discuss the organisations that design and run trials nationally and internationally and how to access information regarding their trials	6.00	1.00	6.22	0.83
	Show awareness of rules for writing scientific papers and how to submit them for publication (ESTRO CC 2019)	6.00	1.00	6.22	0.98

Professional

12) Demonstrate that the care of their patients is their first concern

13) Manage their work life balance to maintain their own wellbeing

		Median	Interquartile range	Mean	SD
Adherence to high ethical standards	Discuss ethical principles and be able to apply them when caring for patients	7.00	1.00	6.59	0.59
	Respect diversity. Do not disadvantage a patient on grounds of their gender, race, culture, philosophical or religious beliefs. Show understanding for patients' ethical concerns and divergent viewpoints	7.00	1.00	6.70	0.55
	Demonstrate respect for patients and caregivers	7.00	0.00	6.78	0.47
	Maintain appropriate boundaries with patients	7.00	1.00	6.59	0.62
	Maintain patient confidentiality and be able to inform patients on the legal situation regarding information held on them in medical notes	7.00	1.00	6.60	0.63
	Apply codes of research ethics including the Good Clinical Practice Guidelines	7.00	1.00	6.68	0.52
	Provide the patient with all relevant information when taking consent	7.00	1.00	6.69	0.50
	Manage conflicts of interest appropriately	7.00	1.00	6.58	0.58

		Median	Interquartile range	Mean	SD
	Exhibit appropriate behaviour in the use of communication on the internet (ESTRO CC 2019)	7.00	1.00	6.46	0.71
Aspire to excellence	Work according to professional codes and laws (ESTRO CC 2019)	7.00	1.00	6.61	0.59
	Keep knowledge and skills up to date, recognise own competency limits and refer appropriately	7.00	1.00	6.72	0.50
	Take responsibility for actions and respond appropriately to negative feedback	7.00	1.00	6.62	0.57
	Work collaboratively with other health care professionals to optimise patient care and to encourage shared decision-making between health professional and patient	7.00	1.00	6.68	0.48
	Recognise and respond to unethical behaviour in other health care professionals	7.00	1.00	6.51	0.75
Maintain own wellbeing	Exhibit self-awareness and manage personal and professional demands to reduce the risk of burn out	7.00	1.00	6.52	0.61
	Seek emotional and developmental support when required	7.00	1.00	6.44	0.69

Note: -blue- Median 6, IQR 1, <80% agree or strongly agree

-red- Median 6, IQR>1, <80% agree or strongly agree

