



Royal College
of Physicians



Clinical
Oncology

The Royal College of Radiologists

Undergraduate non-surgical oncology curriculum

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1. Introduction

More than one in two people in the UK will develop some form of cancer during their lifetime. Cancer survival rates in the UK have doubled over the last 40 years, and half of people diagnosed with cancer now survive for more than ten years.' One-year and five-year net survival increased for eight common cancers in England and Scotland for adults (15-99) diagnosed during the period 2005-2007²⁻³. The number of people living with cancer is expected to double in the next 20 years⁴. By 2035, it is predicted that forty six percent of patients diagnosed with cancer will be over the age of 75 and cancer must also be considered against a background of complexity, multi-morbidity and frailty⁵. This means that almost every doctor in clinical practice will come into contact with patients who have cancer or have had cancer and all doctors must have an understanding of cancer, its treatments and the roles of those treating cancer.

Non-surgical oncology encompasses the treatment of cancer with radiotherapy and systemic anti-cancer therapies (SACT) including chemotherapy. This curriculum describes the knowledge and skills required by all doctors to establish a diagnosis of cancer and care for patients undergoing radiotherapy and SACT.

It is intended that this curriculum will:

- Identify the minimum capabilities in practice for non-surgical oncology that all newly qualified doctors require in order to be safe foundation doctors
- Promote an understanding of cancer and non-surgical oncology in newly qualified doctors to inform their decision-making about future career choices and their future practice, in whichever specialty they enter
- Provide newly qualified doctors with a clear understanding of the role of non-surgical oncologists in treating patients with cancer and facilitate effective cross-specialty working
- Provide a guide for medical schools who are reviewing or developing their teaching of non-surgical oncology for undergraduates.

In their 2018 document Outcomes for graduates⁶, the General Medical Council (GMC) sets out what newly qualified doctors from all medical schools which award UK primary medical qualifications must know and be able to do. The undergraduate non-surgical oncology curriculum illustrates how the generic outcomes described in Outcomes for graduates can be achieved in the context of non-surgical oncology. For ease of mapping to medical school curricula, the curriculum has provided non-surgical oncology-specific descriptors for relevant outcomes listed in Outcomes for graduates.

2. Outcomes and descriptors

The outcomes listed in the curriculum are taken from the GMC's Outcome for graduates. These outcomes are put into the context of non-surgical oncology by the descriptors that follow them. The descriptors are intended to provide guidance to undergraduates and educators about the range of non-surgical oncology contexts which may support achievement of the GMC's 'Outcomes for graduates'. They are not intended to be prescriptive or to provide an exhaustive list. There may be other ways that achievement of these outcomes can be demonstrated. The GMC provides an overarching outcome that underpins all other outcomes and the non-surgical oncology descriptors:



Medical students are tomorrow's doctors. In accordance with Good Medical Practice, newly qualified doctors must make the care of patients their first concern, applying their knowledge and skills in a competent, ethical and professional manner and taking responsibility for their own actions in complex and uncertain situations.

2.1. Professional values and behaviours

2.1.1. Professional and ethical responsibilities

Outcomes

- Newly qualified doctors must behave according to ethical and professional principles.
- Newly qualified doctors must demonstrate awareness of the importance of their own personal, physical, and mental wellbeing and incorporate compassionate self-care into their personal and professional life.

Descriptors

- Demonstrate appropriate attitudes to patients with cancer and their carers.
- Describe an ethical framework to solve ethical dilemmas commonly encountered in management of patients with cancer including end-of-life care.
- Demonstrate an awareness of the need to self-monitor their own well-being and be able to seek appropriate advice and support to manage the personal and emotional challenges of working with patients with cancer and their carers.

2.1.2. Legal responsibilities

Outcome

- Newly qualified doctors must demonstrate knowledge of the principles of the legal framework in which medicine is practised in the jurisdiction in which they are practising, and have awareness of where further information on relevant legislation can be found.

Descriptor

- Demonstrate knowledge of the principles of the legal framework which are relevant to patients with cancer e.g. advanced care planning, power of attorney, DVLA guidance for patients with cancer and its complications.

2.1.3. Patient safety and quality improvement

Outcome

- Newly qualified doctors must demonstrate that they can practise safely. They must participate in and promote activity to improve the quality and safety of patient care and clinical outcomes.

Descriptors

- Demonstrate knowledge of safe clinical practice e.g. treatment guidelines.
- Participate in and promote activity to improve the quality and safety of patient care and clinical outcomes.

2.1.4. Dealing with complexity and uncertainty

Outcome

The nature of illness is complex and therefore the health and care of many patients is complicated and uncertain.

- Newly qualified doctors must be able to recognise complexity and uncertainty. Through the process of seeking support and help from colleagues, learn to develop confidence in managing these situations and responding to change.

Descriptors

- Recognise the complexity and uncertainty in managing patients with cancer.
- Appreciate the importance of seeking support and help from medical and other healthcare professionals.

2.1.5. Safeguarding vulnerable adults

Outcome

- Newly qualified doctors must be able to recognise and identify factors that suggest patient vulnerability and take action in response.

Descriptors

- Recognise and identify factors that suggest patient vulnerability.
- Demonstrate awareness of safeguarding tools and resources to aid complex clinical decision making in patients with cancer, e.g. patient advocates.

2.1.6. Leadership and team working

Outcomes

- Newly qualified doctors must recognise the role of doctors in contributing to the management and leadership of the health service.
- Newly qualified doctors must work effectively within a multi-professional and multi-disciplinary team and across multiple care settings. This includes working face-to-face and through written and electronic means including virtual consulting methods, and in a range of settings where patients receive care, including community, primary, secondary, mental health, specialist tertiary and social care settings and in patients' homes.

Descriptors

- Describe the role/importance of the Multi-Disciplinary Team (MDT) in formulating management plans for patients, e.g. medical oncologists, clinical oncologists, pathologists, radiologists, surgeons and the palliative care team.
- Recognise the need for, and work effectively within, a multi-professional team e.g. physiotherapists, occupational therapists, clinical nurse specialists and dieticians.
- Describe the importance of good communication between teams involved in primary and secondary care, e.g. community, primary, secondary, mental health, specialist tertiary and social care settings.

2.2. Professional skills

2.2.1. Communication and interpersonal skills

Outcomes

- Newly qualified doctors must be able to communicate effectively, openly and honestly with patients, their relatives, carers or other advocates, and with colleagues, applying patient confidentiality appropriately.
- Newly qualified doctors must be able to carry out an effective consultation with a patient using the most appropriate method of communication for the patient.

Descriptors

- Undertake a focused oncological history focusing on common and “red flag” symptoms.
- Undertake a focused oncological examination e.g. assessment for metastatic spinal cord compression.
- Describe the role of communication with professionals and patients in the management of cancer, eg. dealing with uncertainty and discussing prognosis.
- Demonstrate communication skills e.g. principles of breaking bad news and shared decision-making with a patient.
- Demonstrate awareness of the principles of Good Clinical Practice in recruiting and consenting patients into clinical trials.
- Describe the principles of patient confidentiality e.g. discussing patient prognosis with families.

2.2.2. Diagnosis and medical treatments

Outcomes

- Newly qualified doctors must work collaboratively with patients and colleagues to diagnose and manage clinical presentations safely in community, primary and secondary care settings and in patients' homes.
- Newly qualified doctors must, wherever possible, support and facilitate patients to make decisions about their care and management.

Descriptors

- Describe typical presentations of common cancers.
- Describe “red flag” symptoms and signs that are suggestive of an underlying malignancy.
- Describe appropriate urgent referral pathways for patients with a suspected cancer.
- Explain the rationale for obtaining a tissue diagnosis in a patient who may be fit enough for oncological treatment and how it is achieved.
- Describe the general indications for treatment options for patients with cancer e.g. surgery, radiotherapy, cytotoxic chemotherapy, endocrine therapy, biological therapy, immunotherapy.
- Describe the definitions of treatment intent e.g. curative, radical, adjuvant and neoadjuvant, and palliative.
- Outline the factors that may influence treatment options such as treatment intent, co-morbidities, performance status and patient choice.

Outcome

- Newly qualified doctors must be able to perform a range of diagnostic, therapeutic and practical procedures safely and effectively, and identify, according to their level of skill and experience, the procedures for which they need supervision to ensure patient safety.

Descriptors

- Organise and interpret appropriate investigations for a patient with suspected cancer e.g. appropriate imaging and/or interventional investigations for diagnosis and staging.
- Describe the principles of staging of cancers e.g. the, Tumour, Node, Metastasis (TNM) system and how that impacts on prognosis and management.
- Assess a patient's performance status according to a standard scale (e.g. Eastern Cooperative Oncology Group [ECOG], World Health Organization [WHO]).

Outcome

- Newly qualified doctors must be able to work collaboratively with patients, their relatives, carers or other advocates to make clinical judgements and decisions based on a holistic assessment of the patient and their needs, priorities and concerns, and appreciating the importance of the links between pathophysiological, psychological, spiritual, religious, social and cultural factors for each individual.

Descriptors

- Describe the importance of shared decision-making including discussion of "ceiling of care" and advanced care planning.
- Demonstrate knowledge of the importance of patients' wishes with regard to their quality of life when discussing treatment options for cancer.
- Demonstrate a holistic clinical assessment of patients with cancer including the local and systemic sequelae of common cancer presentations.
- Prioritise a patient's clinical and well-being needs.

Outcome

- Newly qualified doctors must demonstrate that they can make appropriate clinical judgements when considering or providing compassionate interventions or support for patients who are nearing or at the end of life. They must understand the need to involve patients, their relatives, carers or other advocates in management decisions, making referrals and seeking advice from colleagues as appropriate.

Descriptor

- Describe the indications for referral to supportive care services including specialist palliative care.

Outcomes

- Newly qualified doctors must be able to give immediate care to adults, children and young people in medical and psychiatric emergencies and seek support from colleagues if necessary.
- Newly qualified doctors must be able to recognise when a patient is clinically deteriorating and take appropriate action.

Descriptors

- Demonstrate awareness of support available through Acute Oncology Services to assess and manage the common toxicities of systemic anti-cancer therapies and the management of immunotherapy-related adverse events, seeking specialist oncological advice when needed.
- Assess and manage the common toxicities of non-pharmacological cancer treatments.
- Recognise common oncological emergencies and demonstrate knowledge of the initial management.

2.2.3. Prescribing medications safely

Outcome

- Newly qualified doctors must be able to prescribe medications safely, appropriately, effectively and economically and be aware of the common causes and consequences of prescribing errors.

Descriptors

- Recognise that specific training is required prior to prescribing or administering systemic anti-cancer therapies.
- Describe the appropriate choice of medication including dose and route to manage symptoms of cancer or treatment-related toxicities.
- Describe the role of non-pharmacological treatments in symptom management.

2.2.4. Using information effectively and safely

Outcome

- Newly qualified doctors must be able to use information effectively and safely in a medical context, and maintain accurate, legible, contemporaneous and comprehensive medical records.

Descriptors

- Demonstrate an awareness of the key resources for patient information including websites e.g. Macmillan, Cancer Research UK and specific cancer type websites recognising the need for reliable and credible information.
- Describe the difference between absolute and relative risks.
- Describe the sources of information to aid decision-making for clinicians and patients. These include NICE guidance; online prognostic and predictive tools; and mutation screening of tumours which provide prognostic and predictive information specific to the individual patient.

2.3. Professional knowledge

2.3.1. The health service and healthcare systems in the four nations

Outcomes

- Newly qualified doctors must demonstrate how patient care is delivered in the health service.
- Newly qualified doctors must recognise that there are differences in healthcare systems across the four nations of the UK and know how to access information about the different systems, including the role of private medical services in the UK.

Descriptors

- Demonstrate awareness of geographical variations in access to cancer treatments.
- Demonstrate awareness of the role of acute oncology services.
- Demonstrate awareness of the role of primary care, community care and hospice palliative care.
- Demonstrate understanding of the role of palliative services and specialist nurses (including the role of the charitable sector).
- Demonstrate understanding of the interaction between primary, secondary and tertiary care services.

2.3.2. Applying biomedical scientific principles

Outcome

- Newly qualified doctors must be able to apply biomedical scientific principles, methods and knowledge to medical practice and integrate these into patient care. This must include principles and knowledge relating to anatomy, biochemistry, cell biology, genetics, genomics and personalised medicine, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and clinical pharmacology, and physiology.

Descriptors

- Discuss the basic pathophysiology and aetiology of cancer, including an awareness of common oncogenes and tumour suppressor genes.
- Describe the basic principles of germline cancer genomics.
- Describe difference between germline and somatic mutations and their potential roles in informing treatment decisions.
- Describe the histological patterns of spread of common cancers e.g. adenocarcinoma, squamous cell carcinoma, sarcoma and haematological malignancies.
- Demonstrate an understanding of the epidemiological trends of cancer in the UK and globally.
- Outline the biological principles of the functions and toxicities of:
 - Biologically targeted therapy
 - Cytotoxic chemotherapy
 - Hormone manipulation
 - Immunotherapy
 - Radiotherapy.
- Describe how radiotherapy toxicity reflects the anatomical site treated.
- Demonstrate an awareness of the long-term sequelae of cancer treatments.

2.3.3. Applying psychological principles

Outcome

- Newly qualified doctors must explain and illustrate by professional experience the principles for the identification, safe management and referral of patients with mental health conditions.

Descriptors

- To recognise the early signs of mental health conditions and identify patients who need help.
- Demonstrate awareness of services available to patients requiring mental health/ psychological support in both hospital and community settings.

2.3.4. Applying social science principles

Outcome

- Newly qualified doctors must be able to apply social science principles, methods and knowledge to medical practice and integrate these into patient care.

Descriptors

- Describe the concept of modifiable and non-modifiable risk factors for cancer development including genetic, lifestyle and environmental.
- Demonstrate an awareness of the impact of health and social inequality on incidence and outcome of cancer e.g. link between income and prognosis.

2.3.5. Health promotion and illness prevention

Outcome

- Newly qualified doctors must be able to apply the principles, methods and knowledge of population health and the improvement of health and sustainable healthcare to medical practice.

Descriptors

- Demonstrate understanding of the principles of health promotion and cancer prevention e.g. smoking cessation, moderating alcohol intake, healthy eating, HPV vaccination.
- Demonstrate understanding of the principles of cancer screening.
- Be aware of the major UK cancer screening programmes.

2.3.6. Clinical research and scholarship

Outcome

- Newly qualified doctors must be able to apply scientific method and approaches to medical research and integrate these with a range of sources of information used to make decisions for care.

Descriptors

- Describe the application of scientific method and approaches to medical research.
- Explain the role of clinical trials in cancer management.
- Understand the different phases of clinical trials.
- Understand the principles of obtaining informed consent from clinical trial participants.
- Demonstrate previous participation in clinical audit and quality assurance.

3. Acute oncological emergencies

Newly qualified doctors need to be able to recognise common and serious acute oncology presentations and conditions and oncological emergencies. They need to begin initial investigations and management of these conditions and refer appropriately to acute oncology teams.

The table is intended to provide guidance rather than exhaustive list.

3.1 Acute oncology presentations and conditions

Acute oncology patient group	Commonly associated acute presentations/conditions
<p>Acutely unwell adult patients who present as an emergency and have a suspected new diagnosis of cancer, or known cancer diagnosis and may be suffering from acute complications of cancer.</p>	<ul style="list-style-type: none"> ▪ Bowel obstruction ▪ Haematemesis ▪ Hypercalcaemia ▪ Malignant ascites ▪ Malignant pericardial effusions ▪ Malignant pleural effusions ▪ Malignant spinal cord compression ▪ Melaena ▪ Raised intracranial pressure ▪ Status epilepticus ▪ Superior vena cava obstruction ▪ Venous thromboembolism.
<p>Acutely unwell adult patients who are currently receiving systemic anti-cancer treatment and/or radiotherapy.</p>	<ul style="list-style-type: none"> ▪ Immune related colitis ▪ Neutropenic fever and sepsis ▪ Radiation mucositis ▪ Tumour lysis syndrome ▪ Thrombocytopenia.

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