Children's Cancer and Leukaemia Group | the EXPERTS in CHILDHOOD CANCER

Systemic Anti-Cancer Therapy (SACT) Competency Passport

Oral, intravenous, intramuscular, subcutaneous, SACT administration for Children and Young People V8.0 2022

This SACT Passport belongs to:	
If found, please return to:	

UKONS Oncology Nursing Society

Developed by The Children Young People Oncology Nurse Educators Group, Children's Cancer Leukaemia Group (CCLG) Chaired by Louise Ollett

Alison Blanchard, **Chemotherapy Specialist Nurse Manchester NHS Trust**
Alison Jones, **Clinical Skills Facilitator Bristol Royal Children's Hospital**
Amanda Nordoff, **Paediatric Practice Nurse Educator The Royal Marsden Hospital**
Amber Walker, **Clinical Practice Facilitator University College London Hospitals**
Andrea Lee, **Clinical Educator Manchester NHS Trust**
Andrea Thomas, **Practice Development Nurse, Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust**
Ashley Wyse, **Clinical Skills Facilitator Royal Hospital for Sick Children Edinburgh**
Chelsea Hammond, **Formerly Nurse Educator CLIC Sargent**
Cindy Sparkes, **Practice Educator for Chemotherapy Great Ormond Street for Children NHS Foundation Trust**
Claire Lawson, **CYP Associate Chemotherapy Nurse Specialist Rainbow Ward Children's Hospital for Wales**
Claire Mackenzie, **Practice Educator Rainbow Ward Children's Hospital for Wales**
Dani Jones, **Practice Educator CYPICS Nottingham/Leicester**
Em Patel, **Practice Educator Great Ormond Street Hospital for Children NHS Foundation Trust**
Hannah Dear, **Formerly Nurse Educator CLIC Sargent**
Helen Blundell, **Clinical Nurse Educator University Hospital Southampton**
Hilary Quinton, **Lead Nurse for Oncology and Haematology Sheffield Children's NHS Foundation Trust.**
Jeanette Hawkins, **Chief Nurse CCLG**
Julia Bottle, **Education Sister Birmingham Children's Hospital**
Julie Brown, **Clinical Educator, Leeds Children's Hospital, Leeds Teaching Hospitals NHS Trust**
Juliette Walter, **Practice Development Nurse, Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust**
Laura Healy, **Practice Educator Oncology/Haematology Alder Hey Children's Hospital**
Linda Sanderson, **Formerly Nurse Educator - CLIC Sargent**
Louise Ollett, **Clinical Educator Great North Children's Hospital Newcastle NHS Trust**
Nadia Freri, **Paediatric Clinical Nurse Educator The Royal Marsden Hospital**
Natalie Stringfellow, **Clinical Educator Manchester NHS Trust**
Phillipa Bower, **Practice Educator Sheffield Children's NHS Foundation Trust.**
Ruth Whitlock, **Practice Development Nurse, Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust**
Suzanne Coulson, **Clinical Educator, Leeds Children's Hospital, Leeds Teaching Hospitals NHS Trust**
Tracey DeMott, **Formerly CLIC Sargent Nurse Educator**
Vicki Villalobos-Lopez, **Practice Educator Great Ormond Street for Children NHS Foundation Trust**
Wendy Saegenschnitter, **Education Lead Bristol Royal Hospital for Children**

Edited by Katherine Fitton, **Paediatric Oncology Quality Assurance Manager, Addenbrooke's Hospital Cambridge University Hospitals NHS Foundation Trust**
Publication date Pilot versions: Pilot V.1 July 2019 V.2 Sept 2020 V.3 May 2021 V.4 November 2021 V.5 March 2022 V.6 April 2022, V.7 May 2022

Publication date: Version 8, December 2022
Review date: December 2023

Background

We are delighted to introduce this Systemic Anti-Cancer Therapy (SACT) Competency Passport for Children and Young People cancer services. We believe that it will transform the way nurses are trained to administer SACT in the United Kingdom and Northern Ireland.

The passport was initiated by the Children and Young People Oncology Nurse's Education Group (CYPONE) hosted by Children's Cancer and Leukaemia Group (CCLG), led by Louise Ollett Clinical Educator Newcastle NHS Trust, in partnership with United Kingdom Oncology Nursing Society (UKONS) and Children's Cancer and Leukaemia Group (CCLG).

Different training and assessment standards for SACT in NHS Trusts, meant that training was often inconsistent and valuable time and money was spent retraining nurses who moved Trusts. This passport is a first for the nursing specialty of Children and Young People's Oncology. The potential benefits are substantial. The passport will ensure SACT training is consistent, up-to-date and will standardise knowledge and best practice across the United Kingdom and Northern Ireland.

Once nurses have completed their passport training, they can then move freely between employers, without the need for additional theoretical retraining, which may result in savings and could help reduce waiting times for patients to be treated.

SACT treatments can be a very frightening time for patients, their families and friends. This passport will ensure that patients will benefit from high quality nursing care that is equally focused on safe drug delivery and supportive care- helping patients and their families manage both the psychological and the debilitating physical effects of SACT.

Scope

The document provides a national standardisation of education and training for the fundamental skills and knowledge required to safely handle and administer SACT, with competency assessed via the 'Career and Education Framework for Children and Young People Cancer Nurses V3.0' (CCLG & RCN, 2022). It is designed for clinicians handling and administering SACT and treating children and young people within Principal Treatment Centre (PTC), Paediatric Oncology Shared Care Units (POSCUs) and community services. After completing this work-based education and assessments clinicians will continue to develop their practice, which may include an accreditation relating to SACT principles in line with local policy.

The management of potential SACT-related acute emergencies is covered in this document (e.g., neutropenic sepsis, electrolyte imbalance, hypersensitivity/anaphylaxis, extravasation and tumour lysis syndrome). UK Oncology Nursing Society (UKONS), CCLG and national standards expect clinicians who administer SACT to have the knowledge and skills to recognize and escalate presenting concerns or commence treatment related to these areas.

Clinicians only need to complete the aspects of the passport pertinent to their role. Assessor professional discretion may be needed in certain instances, e.g., haematology nurses not completing optional scalp cooling questions. Please see flow charts on pages 8-9 for guidance on completion of specific sections by PTC and POSCU level and discuss with Lead SACT trainer within the service. On transfer to another area the new employer has a responsibility to review the presented theoretical section and assess the currency of answers and application in the new employment setting.

Glossary of terms

Systemic anti-cancer therapy refers to all drugs, irrespective of their route of administration, with direct anti-tumour activity, including traditional cytotoxic chemotherapy such as cyclophosphamide, hydroxycarbamide, small molecule/ antibody treatments such as imatinib or rituximab, and immunotherapies such as nivolumab, ipilimumab and other agents such as interferon, thalidomide or lenalidomide. It DOES NOT include hormonal or anti-hormonal agents such as tamoxifen and anastrozole.

The term 'assessor' has been used throughout and can be interpreted according to local practice, e.g., the Assessor or Marker for the Theoretical Section and the Clinical Practice Section may differ. Guidance should be sought from the Clinical Educator assigned to the PTC

The term clinician has been used throughout and refers to nurses who complete the theoretical section (step one). Step two and step three of the passport show examples of assessments that can be used within clinical practice. The CYPONE group recognises that with regards to competency assessment the PTCs may have to adhere to local policy which stipulates a particular format for competency assessments. POSCUs and Children's Community Services should follow guidelines of the regional PTC for competency assessment.

Pre-requisite competencies

Prior to the administration of SACT by any route prerequisite competence, as identified in local policies related to medicines management and SACT, should be completed. UKONS recommends intravenous SACT administration prerequisite competencies include:

- Care and management of central venous access devices and intravenous cannulas including assessment of cannula gauge and length for planned treatment as well as vascular access device site and patency (as applicable to role)
- Infusion device usage relevant to skill
- Calculations for medicines administration, i.e., correct dosing and infusion rate

Pre-requisite theoretical learning

Before clinicians complete the Passport, they should have received foundation stage of training as detailed in the Children's Cancer Measures (National Cancer Peer Review, November 2021).This usually involves work-based education or attending a locally designed training day/program, or a university module, which covers the following core knowledge components:

- Management of central venous devices
- Care of the child who is febrile and neutropenic
- Administration of blood products
- What is cancer?
- How SACT drugs work
- Routes of SACT administration
- Patient assessment
- Toxicities of SACT
- SACT safe handling and administration
- Legal and professional Issues
- Prophylactic/supportive/rescue interventions
- The psychosocial impact of SACT treatment
- Patient education and self-care advice
- Advancing SACT practice – what is next?

Professional responsibility

Personal and professional accountability surrounding medicines management as determined by the clinicians governing body e.g., Nursing and Midwifery Council (NMC 2018) should be adhered to when completing this document.

Assessment process

There are three steps to competency attainment:

- Step one involves completion of the relevant theoretical sections, which serves as 'The Passport', and is not required to be repeated. The theoretical section is designed to be marked either by a clinician in practice e.g. practice educator, or a course module leader

- Step two requires completion of the relevant clinical practice assessment sections (Appendix 2)
- Step three involves completion of the annual reaccreditation certificate (Appendix 3)

Step two and step three are examples of the above that can be used within clinical practice, however the CYPONE group recognise that individual PTCs may or may not wish to use these demonstrated within the Passport. Clinicians are advised to keep copies of any clinical competency for future reference.

Step one: Complete the Passport (Theoretical Section)

The overall aim of the Passport is to ensure that clinicians involved in handling and administering SACT have a minimum level of knowledge prior to undertaking practice. The theoretical section (Passport) should be completed during a probationary/supernumerary period and before the clinical practice assessment, because the theory assessment underpins clinical practice. Passport completion ideally would be conducted concurrently with supervised practice to enable application of theory to practice. Pilot work shows completion of the theoretical sections takes approximately 15 hours.

The clinician should use a variety of resources, including local policies and learning materials, whilst also collaborating with experienced SACT staff to inform their answers. Signposting and resources are found after each question. The completed theoretical section should be given to the assessor for marking and will be used as discussion/questioning points for the theoretical aspect of the clinical practice assessment. The assessor may expand during questioning to support their decision in signing off the theoretical aspect of the assessment. Within this document guidance flow charts are presented with regards to sections for completion by the learner relating to the Trusts PTC, POSCU or Community status. The first flowchart focuses on PTCs, POSCUs and community nursing in England. The second flow chart offers guidance in relation to Wales, Scotland and Northern Ireland.

Step two: Clinical Practice Assessment Section

The clinician is expected to initially practise SACT handling and administration under direct supervision to gain competence and confidence. A clinician named on the trust SACT register should provide supervision, and be physically present, able to observe the trainee clinician and assist as required. Local policies will identify time frames for competency completion.

To practise competently, clinicians should demonstrate safety and skill in the handling and administration of SACT underpinned by theoretical knowledge. They should demonstrate ability to identify potential complications and propose action plans in accordance with national guidelines.

CYPONE recommends that clinical practice is assessed using the SACT competencies within the Children's Cancer Leukaemia Group (CCLG) & Royal College of Nursing (RCN) 'Career and Education Framework for Children and Young People Cancer Nurses V3.0: Section 6 SACT' (2022). This will help to ensure consistency and standardisation of safe practise across the UK. However, individual Trusts may opt to utilise local competency assessments and will be taking responsibility for ensuring these adequately cover the standards required. Similarly, adoption of the SACT Passport V8.0 and Career and Education Framework V3.0 SACT competencies should be approved via Trust Governance processes.

Following completion of the Theoretical Assessment (Passport) and Clinical Practice Assessment the Competence Certificate will be completed and the clinician's name can be added to the Trust SACT register.

Step three: Annual Reaccreditation

Annual competency review is recommended and can be achieved by completing the reaccreditation certificate with a Trust approved SACT assessor. An example of annual competency renewal certificates are found in Appendix 3.

Introduction

Welcome to Children's Cancer and Leukaemia Group's Competency Passport for the Safe Handling and Administration of Systemic Anti-Cancer Therapy (SACT). This document provides an education and assessment framework for the administration of SACT for Children and Young People. The adult SACT passport was initiated by London Lead Cancer Nurses and supported by Capital Nurse to standardise theoretical knowledge and competency of SACT nurses who may move between NHS Trusts and partner organisations. The adult SACT Passport is produced by the UK Oncology Nursing Society (UKONS) who kindly gave permission for their SACT Passport work, concepts and structure to be adapted for paediatric services. The CYPONE group hosted by the CCLG developed this passport in conjunction with the adult passport. The purpose is to provide a high-quality education tool that is recognized as a passport between participating organisations.

SACT treatment can be complex and put patients at risk of significant and potentially fatal toxicities. There are also risks to those who handle SACT from occupational exposure if control measures are inadequate (HSE 2017). It is essential that staff are trained and assessed as competent to safely administer SACT (HSE 2017). Supporting patients and their caregivers during SACT is as important as safe drug delivery. Patients are often fearful of a cancer diagnosis and of SACT treatments. Many struggle to manage the physical and psychological consequences of SACT and the associated disruption to normality (home and work lives). UKONS and CCLG welcome feedback on any element of this document, as we recognise SACT care continuously evolves and patients' needs change. The feedback mechanism is via a clinical educator at the local PTC or via **info@cclg.org.uk** for attention of (F.A.O.) CYPONE

Sections to be completed relating to workforce covered by NHS England Children's Cancer Service Specifications (2021)

1. NHSE (2021) National Cancer Programme of Care: 1746 Principal Treatment Centres Service Specification

SACT

Section 2.2 Operational Delivery Network SACT responsibilities
Section 2.3 PTC Core Treatment Requirements
Section 2.3.5 Information and consent
Section 2.3.6 PTC Workforce
Section 2.4 Interdependencies with other services
Section 4.2 Outcome Indicators

Community Nursing

Section 2.2 The Children's Cancer Network
Section 2.3.6 PTC Workforce
Section 2.4 Interdependencies with other services

2. NHSE (2021) National Cancer Programme of Care: 1746 Paediatric Oncology Shared Care Unit Service Specification

Section 2.3 POSCU Core Treatment Requirements
Section 2.4 Systemic Anti-Cancer Therapy (SACT) – For enhanced POSCUs only
Section 2.5 Patient Information and Consent
Section 2.6 Training / Education
Section 4.2 Outcome Indicators

Children's Community Nurses administrating SACT

Section 1: Complete all questions
Section 2: Complete questions A-H
Section 3: Complete questions A-E
Section 4: Compete questions A-J
Section 5: Complete question A (sign symptoms only) and question D only

Total 29 questions

Theory content to be presented on SACT study day

Enhanced A POSCU & Enhanced B POSCU

Section 1: Complete all questions
Section 2: Complete questions A-H
Section 3: Complete questions A-E
Section 4: Compete questions A-J
Section 5: Complete question A-E (sign & symptoms only for question A)
Section 6: Complete questions A-C
Section 7: Complete questions A-I
Section 8: Complete 8 A-L

Total questions 57 questions

Theory content to be presented on SACT study day

Principal Treatment Centres (PTC)

All Sections and Appendix 1 if suitable for clinical area

Theory content to be presented on SACT study day

Guidance on sections to be completed for Wales, Scotland, and Northern Ireland

Prior to 2021, most UK countries (with the exception of Northern Ireland which does not have a paediatric oncology shared care model of service) were following NHSE guidance on PTC and POSCU Care in line with the NICE (2005) Improving Outcomes Guidance for Children and Young People with Cancer (last reviewed 2014). In 2021, NHSE updated the children's cancer service specifications for England. It is yet to be confirmed if the same approach to shared care will be adopted by the other UK Nations. PTCs and POSCUs in these countries should check with their country specific governing bodies, which model is to be used in relation to SACT. While this variation exists, this Passport retains guidance on SACT education and assessment relating to the historic POSCU levels of care for countries affected.

Children's Community Nurses administrating SACT

Section 1: Complete all questions
Section 2: Complete questions A-H
Section 3: Complete questions A-E
Section 4: Compete questions A-J
Section 5: Complete question A (sign symptoms only) and question D only

Total 29 questions

Theory content to be presented on SACT study day

POSCU Level 1

Section 1: Complete all questions
Section 2: Complete questions A-H
Section 3: Complete questions A-E
Section 4: Compete questions A-J
Section 5: Complete question A (sign & symptoms only) and question D only
Section 6: Complete questions A-C
Section 7: Complete questions A

Total 33 questions

Theory Content to be presented on SACT study day

POSCU Level 2

Section 1: Complete all questions
Section 2: Complete questions A-J
Section 3: Complete questions A-E
Section 4: Compete questions A-J
Section 5: Complete question A-E (sign & symptoms only for question A)
Section 6: A-C
Section 7: A-I
Section 8: A-L

Total 33 questions

Theory content to be presented on SACT study day

POSCU Level 3 and Principal Treatment Centres (PTC)

All Sections and Appendix 1 if suitable for clinical area

Theory content to be presented on SACT study day

1 The Scottish Government (2021) Collaborative and Compassionate Cancer Care: The Cancer Strategy for Children and Young People in Scotland 2021–2026. Ambition 4, 9, and Section 6
2 Northern Ireland Cancer Network (NICaN) (2022) The Administration of Systemic Anti-Cancer Therapies Clinical Competence Framework (Adult and Paediatric Services)
3 The Welsh Health Specialised Services Committee (WHSSC) (2015) CP86: Specialised Services Service Specification: Services for Children with Cancer specifies

Contents

Section one
What is cancer?

Section one: What is cancer?

The word 'cancer' comes from the Latin for 'crab' or 'crayfish' and was first used by Hippocrates to describe the swollen veins radiating from a breast cancer. Cancer is not one disease but a collection of different pathologies affecting different parts of the body. The individuality of each person and the variety of pathologies are reflected in the varieties of treatments and outcomes (Cancer Research, UK 2021). Although the experiences and paths followed by individuals with cancer will differ greatly, there are some similarities in the way cancer develops and spreads within the body.

Cancer can be described as a group of diseases in which cells grow uncontrollably and have the ability to spread away from the site of origin (CCLG, 2016). Each type of cancer has its own characteristics. When a cancer spreads to another part of the body it takes its own characteristics with it. So, for example, if a Wilms' tumour spreads to the lung, the tumour in the lung would both look and behave the same way as the original tumour. This is how primary tumours that have not been located can be found by examining the secondary tumour. Cancer cells develop as a result of damage to DNA, the controlling mechanism for all cell activities. Damaged DNA is normally repaired by the body, but in cancer cells this does not occur.

It is now believed that cancers originate from a single cell. This cell divides and eventually forms what we would class as being a tumour. A tumour may contain up to a million cells (Cancer Research, UK 2020).

Tumours can be either malignant or benign. Malignant tumours are usually cancerous and have a number of characteristics different to that of normal cells. The rate of reproduction in cancer cells is greater than the rate of cell death generally. This is in contrast to normal cells where the number of cells produced equals those dying. It is actually the lack of cell death in cancers that causes them to grow rather than the speed of reproduction being particularly fast. Another important characteristic of cancer cells is their inability to recognise when they come into contact with different cell types. This means they are able to spread away into surrounding tissue and other areas of the body (metastases). Cancerous tumours can originate in any of the common tissue types in the body. Contrary to popular belief, it is only tumours that arise in the epithelium, such as bowel and oesophageal cancers, that are termed 'carcinomas'. However, very few children get carcinomas of this sort.

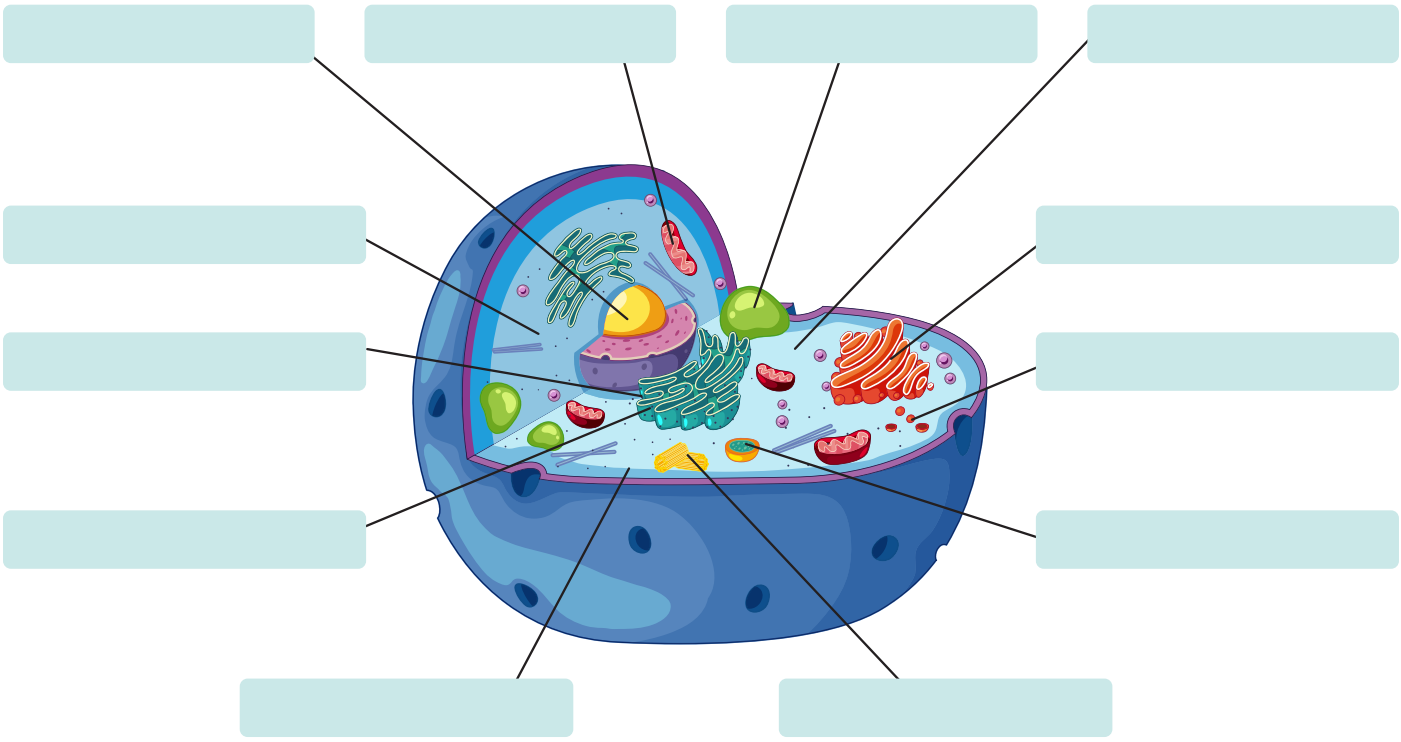
Benign tumours are not classified as cancers. The main difference between benign and malignant (cancerous) tumours are that benign tumours do not attempt to spread away from the site of origin.

Cell cycle

The cell is the structural and functional unit of all living organisms. Human cells vary widely, ranging from simple squamous epithelial cells to the highly specialised neuron. Two types of cells make up all living things on earth: prokaryotic and eukaryotic. Prokaryotic cells, like bacteria, have no nucleus, while eukaryotic cells, like those of the human body, do. Eukaryotic cells contain the cell's DNA in the nucleus and it is separated from the rest of the cellular contents by a double layer of membrane. The cytoplasm consists of a continuous aqueous solution (cytosol) and various organelles. It is important to recognise the characteristics of normal functioning cells, and appreciate how they differ from malignant cells (cell kinetics). The following section asks you to identify the characteristics of a normal functioning cell, (Morgan,2003).

Section one: Question A

Label the basic structure of a normal human cell and describe the function of each structure



Describe the functions:

The cell cycle is an ordered sequence of events, culminating in cell growth and division into two daughter cells. During cell division it is vital that cells replicate every sequence accurately and contain sufficient mass to support division.

The mitotic phase (M), where the nucleus splits, is a relatively short period of the cell cycle. It alternates with the much longer interphase, which is divided into three phases, G1 (first gap), S (synthesis), and G2 (second gap). During all three phases, the cell grows by producing proteins and cytoplasmic organelles. Chromosomes are only replicated during the S phase. The cell cycle also has important checkpoints.

Section one: Question B

Using the space below, draw a diagram of the cell cycle and describe in more detail the specific stages listed above, including the three cell cycle checkpoints.

To enable the 'draw' function in PDF, launch Acrobat and select File > Open to bring up your PDF. From the menu bar on the right, select 'Comment'. Select the marker icon in the comment toolbar to activate the 'Draw Free Form' tool. You can change the colour, line thickness and opacity in the Comment toolbar.

Section two
Systemic Anti-Cancer Therapy (SACT)

Section two: Systemic Anti-Cancer Therapy (SACT)

Question A

Describe below, as if to a new member of staff, what SACT (cytotoxic especially) is, why it may be given in combination, and potential common toxicities. (Cancer Research UK 2014b; Hesketh, 2012; Macmillan Cancer Support, 2017b; Usborne and Mullard, 2018).

What is SACT? (Cytotoxic especially)	
What do the following mean: **Cell cycle phase specific** **Cell cycle non-specific**	
Name three conditions that are treated with SACT medications	
Name one benefit of administrating SACT medication in cycles	
Name one benefit in giving chemotherapy or SACT medication in combination	

Section two: Targeted therapies

Question B

Describe below, as if to a patient, how the following SACT targeted biological/ immunotherapies work and their common toxicities. (Cancer Research UK, 2014a; Cancer Research UK 2021b; Davey, 2016; Macmillan Cancer Support 2021a; Macmillan Cancer Support, 2021b; Mayo Clinic, 2016; Melosky 2014; National Cancer Institute 2017a: Lee 2018 and Kirkwood 2012).

Category	Modality of Action Basic Description. Give one example of each	Common Toxicities
Immunotherapies (Checkpoint inhibitor drugs)		
Monoclonal antibodies		
Anti-angiogenics e.g. vascular epidermal growth factor inhibitors		
Cancer growth blockers (small molecule inhibitors) e.g. tyrosine kinase inhibitors		
Cancer vaccines		

Section two: Treatment terminology

Question C

What do the following terms mean and what is the purpose of these treatments? (CCLG, 2018).

Definition	Explanation and meaning
Neo-adjuvant	
Adjuvant	
Curative	
Palliative	
Clinical trial	
Salvage/Second line	

Section two: Bone Marrow Depression

Question D

Describe the symptoms a child / young person may experience due to bone marrow depression following SACT (Cytotoxic especially) (Local Haematology Parameters; Cancer Research UK, 2020; Freter and Goldie, 2008).

Dose Limiting Toxicity	Effect on patient
Anaemia: Reduced haemoglobin (Hb)	
Thrombocytopenia: Reduced platelets	
Leukopenia: Reduced total white blood cells (WBC) Neutropenia: Reduced neutrophils	

Question E

Describe why SACT, especially cytotoxic agent's affects healthy cells, e.g. bone marrow, gastro intestinal tract or hair follicle cells (Rahma & Khleif, 2016 and Priestman, 2012).

Question F

Define the term 'nadir' and when it occurs?

Question G

What supportive agents can be used to support WBC recovery and how do they work?

Question H

To ensure that a patient has sufficient BM recovery following a course of treatment, some protocols require a minimum standard blood count value prior to commencing the next course of SACT. Provide two examples of protocols used in your area by answer the following:

Name of protocol		
Absolute neutrophil count		
Platelet count		

Question I

Describe the significance of assessing the physiological function of the organs prior to administering SACT (CCLG, 2019; Barrett and Livshits et al. 2014; Mahon and Carr 2021; Park et al. 2013).

Organ function	Why do we assess prior to SACT administration? How does SACT affect the below organs/systems?	What test or investigation should take place prior to SACT administration?
Liver function		
<u>Cardiac function</u> What does FS measure? What would be an acceptable FS before administration?		
Renal function		
Lung function		
GI Tract		

Skin		
Ototoxicity		
Reproductive system		
Peripheral neruopathy		
Eyes		

Question J

For the following SACT agents, what hydration fluids and additives are required? What tests/monitoring are carried out to monitor/minimise nephrotoxicity?

	Hydration	Tests/Monitoring
Cyclophosphamide		
Ifosfamide		
Cisplatin		
High dose methotrexate		

Section three
Fitness for SACT treatment

Section three: Fitness for SACT treatment

Question A

Describe who is responsible for gaining consent for patients receiving SACT. State how long consent is valid, how long it lasts and which treatment(s) it covers. Indicate why consent is a continual process. (Local policies related to Consent and SACT Treatment: Trevealan et al. 2005; Department of Health, 2009; General Medical Council, 2008)

Who is responsible?	
When should consent be taken and retaken?	

Question B

Describe the process you would follow immediately prior to commencing treatment to confirm consent. *(Cancer Research UK)*

Patient/family checks when confirming	Consent form/documentation checks

Question C

Explain the process that should be undertaken if a child/parent/carer refused SACT.

Question D

State how many people should check SACT immediately prior to administration in your organisation, and what qualifications they must have (Per local SACT Treatment Policy).

Question E

Describe the checks that are made before administration of SACT via any route (Local SACT treatment Policy).

The prescription	
Patient identity	
The drug and the dose	
Patient fitness to treat (Specific to first cycle only)	

Section four
Safe handling of SACT

Section four: Safe handling of SACT

Question A

Describe what SACT (especially cytotoxic) waste is & the precautions to take to avoid exposure. Give examples of risks associated with the storage and handling of cytotoxic drugs and the precautions you would take. (Local policies related to Waste and Personal Protective Equipment: HSE, 2015; HSE, 2017; ISOPP, 2007; Polovich et al. 2014).

Describe what SACT Cytotoxic waste is	Give examples of risks with the storage and handling cytotoxic drugs

Question B

State the four main routes for risk of contact of SACT for staff when handling SACT (HSE, 2017; ISOPP, 2007; Department of Health and Human Services, 2004).

1	
2	
3	
4	

Question C

Identify four tasks when a clinician could be potentially exposed to SACT, (especially cytotoxic) agents. How could the clinician minimise exposure? (Local Chemotherapy/SACT Treatment Policy ISOPP, 2007; Department of Health and Human Services, 2004).

	Task	Minimise exposure
1		
2		
3		
4		

Question D

Where should SACT be reconstituted and why? Explain your answer. (HSE, 2015: Polovich et al. 2014).

Question E

Outline how SACT made in pharmacy should be transported and where SACT agents should be stored on the ward/unit. (ISOPP 2007; HSE, 2015 Local Policy).

Transporting	Storing

Question F

Describe how SACT waste/unused drugs and patient excreta should be disposed of in a clinical setting. How should they be labelled and where should they be stored prior to collection? (Local waste Policy: ISOPP, 2007; Department of Health and Human Services 2004).

Types of waste	How is it disposed of, where is it stored
All sharps, syringes and infusion giving sets	
Unused/unwanted/expired SACT agent (including infusion bags that contained a volume of SACT)	

All other items used in the preparation, administration and handling of SACT which is of a disposable nature e.g. gloves and aprons	
Contaminated linen (sweat, vomit, stool, blood)	

Question G

State where the SACT spillage policy and kit are located in your clinical area. How you would manage a cytotoxic spillage? (Spillage Policy: Local Policy).

Where is the spillage kit found?	**Where is the policy found?**
With reference to local policy, how would you manage a dry spill?	**With reference to local policy, how would you manage a wet spillage?**

Question H

Describe the action you would take if a member of staff was contaminated by SACT spillage. How do you replace the spillage kit once is has been used? What documentation would you complete? (Local Spillage Policy: Record Keeping/Documentation Policy: Waste Management Policy).

Actions	Replacing spillage kit	Documentation

Question I

Outline what is recommended, for staff members who are pregnant, in terms of safe handling of cytotoxic therapies and waste (Local SACT Treatment Policy; Gilani and Giridharan 2014; ISOPP, 2007).

Scenario

A patient in a four-bedded bay with three other patients is receiving an intravenous SACT agent and the bag bursts, what would be your action?

Question J

Explain the action to be taken if an individual became accidently exposed to a cytotoxic agent via the following routes.

	Action
Skin	
Eyes	
Inoculation	

Section five
Patient education, preparation and self-care

Section five: Patient education, preparation and self-care

Question A

Describe the information/advice you would give a patient &/or carer concerning the following, to ensure their safety and help manage treatment complications when receiving SACT. Include the potential psychological impact of each (Bloomfield and Tanay, 2012, Cramp and Byron-Daniel, 2012; Children's Cancer and Leukaemia Group, 2019b; Cancer Research UK, 2015; Ikeda et al. 2017 Jones et al. 2015; UKOMIC 2015; Riola et al. 2010).

	Management advice for patient/carer	Patient recognition advice Signs and symptoms
Increased risk of bleeding and susceptibility to bruising		*Give 5 examples*
Febrile neutropenia, immunosuppression, and risk of sepsis		*Give 5 examples*
Anaemia		
Alopeica		
Risk of deep vein thrombosis development (local policy)		*Give 5 examples*

Fatigue		
Skin care, including hypersensitivity		
Mouth care		*Discuss 8 categories of assessment*
Nausea and vomiting		
Constipation		

Diarrhoea		
Loss of appetite and taste changes **Diet (Including foods to avoid)**		
Fertility (including barrier protection and fertility preservation options)		
Teenage intimacy and sexual activity		
School/socialising		
Exercise		

Question B

Ask two or three of your patients how they felt about starting SACT (what worries or concerns did they have). Consider the psychological and social impact of receiving SACT (use the topics below to guide you) (CCLG, 2019c; Oakley et al. 2016).

Worries and concerns
Effect on body image
How has this affected the patients?
Reflect on what support and interventions are available for patients

Question C

Outline the local and national support services available to your patients and their carers. How can you help patients to access these services? (Patient support websites eg Young Lives vs Cancer, CCLG, CRUK, Lymphoma Association).

Name four sources of information, which will help you explain about side effects of specific SACT agents.

Question D

Outline the precautionary advice you would give a parent/carer about safe handling of body fluids/waste, when doing the laundry/cleaning, contact with family members/children and sexual activity/pregnancy following SACT agents (Haddadin and Cook, 2014).

	Advice provided
How long do precautions need to be taken for?	
Body fluids (urine, stool, vomit, saliva, sweat, nappies, semen, vaginal secreations)	
Hand washing	

Washing laundry contaminated with SACT wastage	
Wearing gloves (refer to local policy)	
Family members and children	

Question E

Describe what you need to check with the patient before you or they leave the care environment, i.e. discharged from hospital/sent home/you leave the home following their first course of SACT. Reflect on one discharge process. (Clinical Reasoning: SACT Treatment Policy, Discharge Policy).

Section six
Oncology emergencies

Section six: Oncology emergencies

Question A

Describe the effect the following SACT related oncology emergencies and severe side effects could have on the patient. In addition to patient reassurance, outline the immediate nursing management of the identified emergencies (Mughal 2017, Jones et al. 2015; NICE 2012; UKONS, 2015).

Oncology emergency	Potential life-threatening impact on patient	Consider immediate/ ongoing nursing management	Patients at more risk (with regards to pre-exisiting condition, presenting factors and SACT regimes/drugs
Neutropenic sepsis			
Tumour lysis syndrome			

Oncology emergency	Potential life-threatening impact on patient	Consider immediate/ ongoing nursing management	Patients at more risk (with regards to pre-exisiting condition, presenting factors and SACT regimes/drugs
Neutropenic enterocolitis/ typhilitis			
Ifosfamide encephalopathy			
Spinal compression			

Oncology emergency	Potential life-threatening impact on patient	Consider immediate/ ongoing nursing management	Patients at more risk (with regards to pre-exisiting condition, presenting factors and SACT regimes/drugs
Hyperleucocytosis			
Seizures			
Raised ICP			

Question B - Scenario

A newly diagnosed patient with acute lymphoblastic leukaemia (ALL) has been admitted to your clinical area. On admission they have a white cell count of 160. What would be your nursing intervention/care for this patient?

Question C

What supportive measures are in your area to manage oncological emergencies?

Question D

How should unwell patients present to the department? How does your department optimise patient safety with regards to febrile neutropenia (NICE, 2012; CCLG, 2020)

Question E

Write an intervention/care plan for a patient with an oncological emergency.

Question F

Describe the effect the following immunotherapy related toxicities could have on the patient and the immediate nursing management of each, in addition to patient reassurance. Please note immunotherapy related emergencies can occur after treatment completion (Friedman and Postow, 2015).

Toxicity	Potential impact on patient	Nursing management
Pneumonitis		
Colitis		
Skin		

Section seven
Complications

Section seven: Complications

Hypersensitivity & anaphylaxis

Question A

State where the hypersensitivity/anaphylaxis policy is in your clinical area, and where the hypersensitivity kit and arrest trolley are located.

Policy	Kit	Trolley

List some drugs that have the potential to cause an infusion reaction

Drug	Signs and symptoms

Question B

Describe how you would prevent, recognise and treat both a hypersensitivity reaction and anaphylactic reaction to SACT (Local Extravasation Policy, Rosello et al. 2017).

Hypersensitivity	
Prevent	
Recognise	
Treat	
Anaphylaxis	
Prevent	
Recognise	
Treat	

Question C

What precautions/amendments would be made when a patient has had previous sensitivity to a SACT? Give two examples
Example one
Example two

Question D

Describe where the infiltration/extravasation policy is in your clinical area. Identify where the management kit is located and list its contents (Local Policy).

Policy	Kit	Pack contents

Describe the difference between an infiltration and an extravasation incident.

Infiltration	Extravastion

Question E

Outline four venous access checks you make before and during administration, or if a patient reports discomfort during SACT administration (Dougherty and Lister, 2015; Wengstom and Margulies, 2018; Royal College of Nursing, 2016).

	Check
1	
2	
3	
4	

Question F

Describe how you would prevent, recognise and treat both a SACT infiltration and extravasation (consider both peripheral and central access) (Fidalgo et al. 2012; Doellman et al. 2009; Wengstom and Margulies, 2018).

<table>
<tr><td rowspan="3">Prevent</td><td colspan="2">Venous assessment/appropriateness of site:</td></tr>
<tr><td colspan="2">Device:</td></tr>
<tr><td colspan="2">Administration:</td></tr>
<tr><td>Recognise/signs and symptoms</td><td colspan="2"></td></tr>
<tr><td>Treatment and management</td><td>Extravasation:</td><td>Infiltration:</td></tr>
</table>

Question G

Outline the most frequently given SACT drugs in your clinical area under the classification of vesicant, irritant or non-vesicant and the treatment they would require should they extravasation.

Classification	SACT drugs	Treatment
Neutral drug		
Irritant		
Vesicant		
Vesicant – non vinca alkaloid		

Section eight
Routes of administration

Section eight: Route of administration

A) Oral administration

Outline four SACT drugs administered orally in your area of practice and explain how they work. Please ensure examples include a range of SACTs with differing modalities of actions (where possible) (Chemocare, 2002-2021).

	Name of drug	Modality of action (How it works)	Cell cycle specific? Which part of the cell cycle affected?
1			
2			
3			
4			

Describe the conditions the drugs named above are routinely prescribed for, the parameters assessed (per protocol) and significant/frequently occurring toxicities of each (Local Drug Protocol; Chemocare, 2002-2017).

	Name of drug	Condition prescribed for	Parameters assessed	Significant & frequently occuring toxicities
1				
2				

3				
4				

Describe how would you assess and educate a patient or carer to self- administer oral SACT (Cancer Research UK, 2015a; MASCC, 2012; Oncology Nursing Society, 2016).

Patient assessment elements (consider suitability to take oral formulation and contraindications)

Patient education elements

How would you ensure safety of medications? What would you advise?

Describe the risk factors for non-adherence with oral SACT and what helps patients to adhere. What health care professional would you work in conjunction with? (Oncology Nursing Society, 2016; CCLG 2019; Oakley et al. 2010a; Regnier Denois et al. 2011; Verbrugghe et al. 2012; Walker 2016).

Risk factors for non-adherence	Factors that help adherence

A patient/carer is unable to read and write, how would you manage this scenario?

Describe how patients should dispose of left over oral SACT at home. (Clinical Reasoning, Waste Management Policy, Local SACT policy).

B) Subcutaneous or Intramuscular administration

Outline two SACT drugs that are administered by subcutaneous or intramuscular injection in your area of practice and explain how they work. Please ensure examples include a range of SACTs with differing modalities of actions (where possible). (Chemocare 2002-2017; EMC, 2017).

Classification	Name of drug	Modality of action (How it works.)
1		
2		

Describe the conditions the drugs named above are routinely prescribed for, the parameters assessed (per protocol), and significant/frequently occurring toxicities of each. (Local Medication Management Protocol; Chemocare, 2002-2017).

Name of drug	Condition prescribed for	Parameters assessed	Significant and frequently occurring toxicities

Describe how would you assess and educate a patient or carer to self-administer a subcutaneous or intramuscular injection? (Clinical Reasoning; SACT Policy; Medicines Management Self-administration policy; Leveque, 2014).

Self-educate	Educate Carer

Describe the advantages and disadvantages of the subcutaneous & intramuscular route for the administration of SACT. (Leveque, 2014).

Advantages	Disadvantages

C) IV Bolus and Infusion

Outline four SACT drugs that are administered by the intravenous route in your area of practice and explain how they work. Where possible try and ensure examples include a range of SACTs with differing modalities of actions (include cytotoxic, an immunotherapy, and a monoclonal antibody). (Local Medication Management Protocol; Chemocare, 2002-2017).

	Name of drug	Modality of action (How it works)	Which part of the cell cycle affected?
1			
2			
3			
4			

Describe the conditions the six drugs named above (in B and C) are routinely prescribed for, the parameters assessed (per protocol), and significant/frequently occurring toxicities of each. (Local Drug Protocol, Chemocare, 2002-2017).

Name of drug	Condition prescribed for	Perameters assessed	Significant and frequently occuring toxicities

Describe how would you assess and educate a patient or carer to self- administer cytarabine at home? (Clinical Reasoning; SACT Policy; Medicines Management Self-administration policy; Leveque, 2014).

D) Other routes

D1. Intrathecal

Describe what a 'never event' is concerning intrathecal chemotherapy administration, and outline who can check intrathecal chemotherapy. (Local Intrathecal Policy; NHS England, 2015; NHS Improvements, 2014).

D2. Intra-arterial

(cancerresearch.org)

Explain what Intra-arterial chemotherapy consists of?

D3. Reservoir

Explain how chemotherapy is given via a reservoir. Include the patient group that may receive chemotherapy via this route and three side effects that can occur

Section nine
Scenarios

Section nine: Scenarios

High dose methotrexate

Whilst methotrexate is used in many chemotherapy protocols in standard doses, when higher doses (above 60mg/m²) are to be administered careful and specific toxicity management is required.

Why is it necessary to administer intravenous fluids and observe urine output prior to administering high-dose methotrexate?

What is the rationale for adding sodium bicarbonate to Intravenous hydration fluids?

Why is it important that the pH is tested as soon as possible after the urine has been passed?

What must the urinary pH be prior to, and during an infusion of high dose methotrexate?

Methotrexate levels and folinic acid rescue timings are not the same for all protocols. Look at one protocol using high dose methotrexate in your area, plan when folinic acid rescue will start and when levels are required if methotrexate commenced at 13.00hrs. What would the levels need to be in order for your patient to complete hydration and folinic acid rescue?

You meet Johnny on your unit who is undergoing treatment for ALL. He has returned with a weight of 23.9kg. He is due IV and IT methotrexate, and folinic acid rescue during his admission. His prescription is based on his diagnosis weight of 26kg. He is to receive 5g/m2 of IV methotrexate.

What is Johnny's new BSA?

Does this affect the prescription of his IV methotrexate? (You will need to show calculations for both new and old weights)

Would Johnny's methotrexate be considered high-dose and why?

What 'rescue' would you need to give to prevent life-threatening complications associated with methotrexate toxicity and how does it work?

At T48 his methotrexate level comes back high. What actions would you consider?

Ifosfamide

When working a nightshift, you are looking after a patient who has had Ifosfamide four hours ago. The patient is very disorientated and has lost bladder control, which is very unusual for the patients age. On discussion with the doctor and after a clinical examination the doctor states the result of these symptoms are from the anti-emetic metoclopramide.

How would metoclopramide sensitivity be treated?

Explain how the treatment works and when symptoms should ease?

What else should be considered?

After one hour the patient is further disorientated and confused, what would your action be?

What drug is given to counteract this effect?

Cisplatin

A patient is receiving cisplatin over 24 hours. The parent asks why hydration fluid is administered with this drug? Explain your answer

Mannitol is used in conjunction with cisplatin, why is this necessary?

The patient has not passed urine for five hours, what action would you take? Justify your action

Name at least three electrolytes that can be affected by cisplatin infusion

High dose chemotherapy with autologous peripheral blood stem cell transplant (PBSC)

High dose chemotherapy with autologous transplant is used in some solid tumours to maintain remission. Autologous transplants use the patient's own cells. Stem cells are harvested when the patient is in clinical remission prior to high-dose chemotherapy; the cells are cryopreserved (DMSO) to be given to 'rescue' patients following myeloablative chemotherapy treatment. Autologous transplants are a very different procedure from allogeneic transplants, due to the origination of the cells - autologous use the patient's own cells and allogeneic cells come from a donor.

There may possibly be some decreased toxicity and fewer side effects. Please be aware that some of the side effects discussed in this section may also be seen within allogeneic transplants.

What is the purpose of High-dose chemotherapy with autologous stem cell rescue (PBSC)?

Give three examples of cancers which may be treated with high-dose chemotherapy and autologous stem cell rescue in your unit?

In relation to transplant conditioning, what is Myelo-ablative conditioning? You may need to look at a patient protocol.

What are the benefits of a peripheral blood stem cell harvest over a bone marrow harvest?

What are the advantages of autologous transplants over allogeneic?

The following are used in relation to a patient undergoing a PBSC Harvest; identify the drug used in each situation:

Priming
Administration of a cytotoxic drug about 10 days prior to the stem cell harvest. This will ensure the blood is clear of circulating tumour cells and cause myelosuppression which will encourage new growth of stem cells.

Example of drug used;

Mobilisation
To encourage and stimulate the growth and mobilisation of haemopoietic stem cells from the bone marrow into the circulation.

Example of drug used;

What blood count would we use to confirm a patient is ready to have their cells harvested?

What specific side effects could a patient be at risk of during and following transfusion of the PBSC and how could these be prevented?

Describe the specific nursing care a patient will receive during the transfusion of their stem cells and rationale (Consider the nurses involved and their roles).

Name six specific side effects a patient could face following high-dose chemotherapy.

Veno-occlusive disease (VOD) can present post-transplant (seen in both autologous and allogeneic), it usually presents in the first 14 days post-transplant. Patients who have had intensive conditioning or who are receiving a second transplant are at greater risk of developing VOD.

What is VOD?

Can you name three symptoms of VOD?

What prophylaxis treatment might a patient have received to prevent VOD, and how does this work?

Describe the amangement of symptoms relating to VOD under the headings below.

General nursing (pain-where?/neutropenia etc):

Diuretics (aiming for an equilibrium):

Paracentesis:

High Does Allogeneic Haematopoietic Stem Cell Transplant:

Allogeneic transplant is a more complex procedure than the autologous transplant and the choice of which is usually due to suitability in terms of the disease it is being used for. It involves harvesting cells from a donor. This can be a related or unrelated source or even an umbilical cord. It usually results in greater toxicity from the conditioning regimens and marrow aplasia, as well as other complications from the transplant process such as Graft Versus Host Disease (GvHD) and VOD among others. However toxicity is mapped against the benefits of the procedure, for example disease free cells and immunological effects of graft versus leukaemia effect that reduces the risk of relapse.

Using the information above, if a patient has a cord stem cell transplant is this allogeneic or autologous transplant and how do you know?

What do you understand by the term 'full intensity' conditioning regime and 'reduced intensity' conditioning regime? What is the purpose?

Within your trust and according to local policy, what safety procedure is carried out to prevent high-dose chemotherapy being given without cells being available for rescue, and what is the rationale for this?

Name three SACT agents used in a regime for allogeneic transplant and name two side effects for each drug?

Name of SACT	Side effects
	1.
	2.
	1.
	2.
	1.
	2.

What is mycophenolate mofetil and cyclosporin and what are they used for?

Which SACT drug is used to prevent GvHD following donor cell infusion?

When is it given?

When would you NOT complete the course of this drug?

Some transplants require the use of Campath (Alemtuzumab) which is specifically used in the conditioning regimes for patients undergoing an unrelated donor transplant. Please explain what this drug is and how it works?

What do you need to give before Campath and why?

Appendix 1

Suitable to clinical area- Hair loss/scalp cooling (optional questions/role specific)

How would you explain how scalp cooling works to a patient and how effective this is?
(Local Scalp Cooling Policy; Scalp cooling manufacturers guidelines; Breastcancer.org 2017; Cancer Research UK, 2014c; Nangia et al. 2017).

Describe how you would explain to a patient the benefits/advantages and disadvantages of scalp cooling and for whom it would be unsuitable or contraindicated. (Local Scalp Cooling Policy; Scalp cooling manufacturers guidelines; Breastcancer.org 2017; Cancer Research UK 2014c; Rugo et al. 2017).

Patient benefits	Patient risks	Unsuitable/contraindicated for

Outline which drugs would be appropriate for scalp cooling and the pre- and post-infusion time for each (per local policy) (Local Scalp Cooling Policy; Scalp cooling manufacturers guidelines).

Suitable drugs	

Appendix 1

Pre- and post-infusiom times	

Outline how you would apply the scalp-cooling cap to achieve maximum benefit and what self-care advice you would provide (Local Scalp Cooling Policy; Scalp cooling manufacturer's guidelines).

On application	
On removal	
Self-care advice before	
Self-care advice following	

Appendix 1

What advice/information would you give to patients to assist and alleviate any discomfort associated with scalp cooling? (Breastcancer.org 2017).

Describe the potential psychological impact of hair thinning/loss, when this is likely to start and suggestions/ reassurance you can provide to patients (Breastcancer.org 2017).

Appendix 2

SACT SAFE HANDLING AND ADMINISTRATION CERTIFICATE

Personal Development

- ☐ I have successfully completed a SACT training package
- ☐ I have successfully completed pharmacy's assessment and competency package to dispense supportive medicine to chemotherapy patients (where relevant)
- ☐ I have successfully completed the Clinical assessments for the Safe Handling and Administration of Systemic Anti-Cancer Therapy (SACT) Theoretical Section (Passport) OR provided evidence of theoretical understanding i.e. accredited module/course transcript/previously completed a theory workbook that assesses the same content to the same standard or above

Policies and standards

I have read and understood the current trust/local/alliance:

- ☐ Medicines Policy and related Codes of Practice
- ☐ Standards for the Safe Use of Oral Anticancer Medicines (where relevant to role)

Local SACT Policy: State name, number, and year of publication

Other (organisation specific): State Name, number, year of publication

Declarations

To I declare that I am clinically competent to safely administer SACT and have successfully completed clinical assessments listed below, and had SACT competencies signed off in the Career and Education Framework for CYP Cancer Nurses V3.0 2022

- ☐ Intravenous (Bolus)
- ☐ Intravenous (Infusion
- ☐ Intravenous (Ambulatory device)
- ☐ Intramuscular/subcutaneous injection
- ☐ Oral
- ☐ Other (please state):

- ☐ I declare that I am competent to conduct SACT pre-treatment consultations.
- ☐ I declare that I am competent to electronically document on the local e-prescribing system (if used)
- ☐ I understand that my name will be removed from the register 12 months after the date of certification unless I successfully complete re-accreditation.
- ☐ I understand that if my name has been removed from the register, my rights to administer SACT on the local prescribing system (if used) will be revoked unless I successfully complete re-accreditation.

Signed: _____ Date: _____

Name: _____

Position: _____ (Clinician)

I certify that _____

is deemed safe and competent to administer SACT Independently via the routes indicated above.

Signed: _____ Date: _____

Name: _____

Position: _____ (Trust Approved SACT assessor)

Appendix 2

Supervised administration record: Bolus

Supervised Administration Record: **Bolus Chemotherapy Medications**	**Practitioner's name:**

The practitioner can administer medications safely and discuss complications and ongoing care.
The practitioner and supervisor(s) should undertake observed assessments until they are both confident that competency has been achieved. A minimum of five assessments need to be undertaken and recorded.

For each supervised practice the trainee must be C = competent	**Min level**	**Supervised assessments**				
		1	**2**	**3**	**4**	**5**
1. Legal and ethical issues						
		Date	Date	Date	Date	Date
Demonstrates an understanding of their accountability and responsibility in relation to bolus chemotherapy medication administrations according to relevant legislation and their governing body. Ensure patient aware of entitlement to free prescriptions.	C					
Hand hygiene as per Local infection control guidelines maintained throughout the procedure.	C					
2. Pre-administration assessment						
Introduces self to patient and carer. Communicates with patient proposed plan of care and obtains informed consent.	C					
Review of treatment order.	C					
Ensures availability of prescribed and dispensed chemotherapy agents.	C					
Performs appropriate procedure for correctly identifying patient.	C					
Assesses patients' perceptions/ history including toxicity assessment.	C					

Appendix 2

Able to identify contraindications and/or pre-treatment monitoring requirements for prescribed treatment.	C					
Able to interpret critical tests and is aware of normal blood parameters.	C					
Use appropriate strategies to reduce anxiety to increase understanding and encourage concordance.	C					
Ensures good venous access patent and available for SACT.	C					
Demonstrate appropriate selection and preparation of treatment environment and equipment including access to and functionality of emergency equipment: • Vital signs monitoring equipment available • Appropriate use of ANTT as per local policy • Appropriate use of PPE • Appropriate decontamination of drip stand and infusion device • Cytotoxic extravasation and spill kit are accessible • Eye wash kit available • Cytotoxic waste disposable containers accessible at point of treatment	C					
Offers patient opportunity to attend to comfort needs prior to administration.	C					

3. Administration preparation						
Assemble necessary equipment: • ANTT equipment as per local guideline • Intravenous administration set appropriate to treatment plan with needle free injection port • Intravenous fluid as compatible to fluid being administered • Appropriate dressing pack as per local guidance.	C					
Establish venous access as per local policy and attach primed set following ANTT, ensuring line is safely secured.	C					
Confirm patency of patients' venous access by observing blood return. Adhere to local policy when accessing CVAD. Any concerns speak to senior nurse.	C					
4. Patient treatment confirmation						
Adheres to local SACT medicines policy.	C					
5. Administration technique						
Ensures appropriate PPE as per local policies.	C					
Administer medication in prescribed order i.e. pre medication then intravenous vesicant bolus etc.	C					
Set gravity infusion rate to an appropriate flow rate and pressure rate as per local policy	C					
If patient has peripheral venous access, check patency intermittently during administration. Intervene appropriately if patency decreases or ceases.	C					

Assess patient for venous complications, anxiety and hypersensitivity reactions during administration at an appropriate frequency. Intervene appropriately if complications and or reactions become evident.	C					
Utilises tray under the connection of the needless connection and luer-lock syringe to provide protection to the patient, chemotherapy nurse and environment from mechanical malfunction.	C					
Dispose of cytotoxic waste as per local cytotoxic waste management policy.	C					
6. Termination of procedure						
Documents episode of care conforming with NMC and local guidelines for records and record keeping.	C					
Ensure appropriate methods of communication are utilised to communicate necessary information to the MDT and/or other health care professionals.	C					
Ensures patient is aware that therapeutic interaction is completed and has adequate follow-up arrangements and has discharge medications if required.	C					

Assessment sign-off

Supervised Administration Record: **Bolus chemotherapy medications**	**Practitioner's name:**	
Supervised administration No.1	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.2	Date:	Signed:
Supervisors comments		
Practitioner Comments		
Supervised administration No.3	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Supervised administration No.4	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.5	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Appendix 2

Supervised Administration Record: Intravenous

Supervised administration record: **Intravenous Chemotherapy Medications**	**Practitioner's Name:**

The practitioner can administer medications safely and discuss complications and ongoing care.
The practitioner and supervisor(s) should undertake observed assessments until they are both confident that competency has been achieved. A minimum of five assessments need to be undertaken and recorded.

For each supervised practice the trainee must be C = competent	**Min level**	**Supervised assessments**				
		1	**2**	**3**	**4**	**5**
1. Legal and ethical issues						
		Date	Date	Date	Date	Date
Demonstrates an understanding of their accountability and responsibility in relation to intravenous chemotherapy medication administrations according to relevant legislation and their governing body.	C					
Hand hygiene as per local infection control guidelines maintained throughout the procedure.	C					
2. Pre-administration assessment						
Introduces self to patient and carer. Communicates with patient proposed plan of care and obtains informed consent.	C					
Review of treatment prescription.	C					
Ensures availability of prescribed and dispensed chemotherapy agents.	C					
Performs appropriate procedure for correctly identifying patient.	C					
Assesses patients' perceptions/ history including toxicity assessment.	C					
Able to identify contraindications and / or pre-treatment monitoring requirements for prescribed treatment.	C					

Able to interpret critical tests and is aware of normal blood parameters.	C					
Use appropriate strategies to reduce anxiety to increase understanding and encourage concordance.	C					
Ensures suitable venous access available and selects appropriate route as per prescription.	C					
Demonstrate appropriate selection and preparation of treatment environment and equipment including access to and functionality of emergency equipment • Vital signs monitoring equipment available • Appropriate use of ANTT as per local policy • Appropriate use of PPE • Appropriate decontamination of drip stand and infusion device • Cytotoxic extravasation and spill kit are accessible • Eye wash kit available • Cytotoxic waste disposable containers accessible at point of treatment	C					
Offers patient opportunity to attend to comfort needs prior to administration.	C					
3. Administration preparation						
Assemble necessary equipment: • Follow local policy with regards to ANTT • Intravenous administration set appropriate to treatment plan with needle-free injection port • Intravenous fluid as compatible to fluid being administered	C					
Establish venous access as per local policy and attach primed set following ANTT, ensuring line is safely secured	C					

Confirm patency of patients' venous access by observing blood return. Adhere to local policy when accessing CVAD. Any concerns speak to senior nurse	C					
4. Patient treatment confirmation						
Adheres to local SACT medicines policy.	C					
5. Administration technique						
Ensures appropriate PPE as per local policies.	C					
Confirms patency and safety of needle-free connection device on the intravenous administration set by administering 5ml of 0.9% sodium chloride in an appropriate luer-lock syringe.	C					
Administer medication in prescribed order i.e. pre-medication then intravenous vesicant bolus etc.	C					
Set infusion rate to an appropriate flow rate and pressure rate for medical devices.	C					
If patient has peripheral venous access, check patency intermittently during administration. Intervene appropriately if patency decreases or ceases.	C					
Assess patient for venous complications, anxiety and hypersensitivity reactions during administration at an appropriate frequency.	C					
Intervene appropriately if complications and or reactions become evident.	C					

Utilises sterile gauze square under the connection of the needless connection and luer-lock syringe. Fully covering the connection when applying to the syringe plunger, providing protection to the patient, chemotherapy nurse and environment from mechanical malfunction.	C					
Dispose of cytotoxic waste in an appropriate manner conforming to local SACT waste management policy.	C					
6. Termination of procedure						
Documents episode of care conforming with NMC and local guidelines for records and record-keeping.	C					
Ensure appropriate methods of communication are utilised to communicate necessary information to the MDT and/or other health care professionals.	C					
Ensures patient is aware that therapeutic interaction is completed and has adequate follow-up arrangements and has discharge medications if required.	C					

Assessment Sign-off

Supervised Administration Record: **Intravenous chemotherapy medications**	**Practitioners name:**	
Supervised administration No.1	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.2	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.3	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Supervised administration No.4	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.5	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Appendix 2

Supervised administration record: Oral

Supervised Administration Record: **Oral chemotherapy medications**	**Practitioner's name:**

The practitioner can administer medications safely and discuss complications and ongoing care.
The practitioner and supervisor(s) should undertake observed assessments until they are both confident that competency has been achieved. A minimum of five assessments need to be undertaken and recorded.

For each supervised practice the trainee must be C = competent	**Min level**	**Supervised assessments**				
		1	**2**	**3**	**4**	**5**
1. Legal and Ethical Issues						
		Date	Date	Date	Date	Date
Demonstrates an understanding of their accountability and responsibility in relation to oral chemotherapy medication administrations according to relevant legislation and their governing body.	C					
Demonstrates an understanding of care needs of patients and carers which are specific to oral medications.	C					
Hand hygiene as per local infection control guidelines maintained throughout the procedure.	C					
2. Pre-administration patient and carer education and assessment						
Introduces self to patient and carer.	C					
Discusses chemotherapy patient information leaflet with patient and carer.	C					
Asks the patient/carer what they understand about the treatment and provides opportunities for questioning/discussion throughout assessment.	C					

Able to assess the patient's/carer's ability to self-medicate • Ensure patient's/carer's ability to take medication correctly • Ensures patients/carers can effectively monitor of side effects • Ensure patients/carers recognise when to call for support and report symptoms or side effects.	C					
2. Pre-administration patient and carer education and assessment						
Explain/discuss regimen and intended number of cycle including treatment gaps.	C					
Explain/discuss how and when to take the oral chemotherapy medication.	C					
Explain/discuss what to do in the event of missing a dose.	C					
Explain/discuss what to do in the event of vomiting after a dose.	C					
Explain/discuss the need for, and how to obtain, further supplies.	C					
Explain/discuss the role of their GP in supporting them during treatment.	C					
Explain/discuss safe handling, storage and disposal of oral chemotherapy.	C					
Explain/discuss possible drug interactions including herbal or other supplements.	C					
4. Patient self-monitoring						
Explain/discuss how to access in and out-of-hours help and support.	C					

Explain/discuss potential side effects including fertility issues.	C					
5. Provision of written information						
Ensure patient/carer understands written information that is provided.	C					
Written information should include: • The patient's individualised treatment regime/plan • Chemotherapy alert card • Chemotherapy diary • In-out-of-hours advice line information • Next appointment with health care professional	C					
6. Patient support during chemotherapy						
Able to assess patient/carer needs for supportive services, and demonstrates knowledge of and ability to refer for support. For example, community nursing services, palliative care team.	C					
Ensures patient is informed of free prescription service.						
7. Nurse administration of oral chemotherapy medications						
Patient identification is agreed and checked prior to dispensing medication.	C					
The patient's prescription is verified and checked prior to dispensing.	C					
Establishes that critical tests have been performed as per protocol.	C					
Able to interpret critical tests and is aware of normal blood parameters.	C					
Reviews the patient's performance status and fitness to undergo treatment.	C					
Assessment of toxicities is undertaken prior to each cycle of treatment.	C					

Identifies any contraindications and monitoring requirements for each prescribed treatment.	C					
Ensures appropriate PPE is worn as detailed in Trust policy.	C					
Aware of safe disposal procedures for all equipment used as per local policy.	C					
Explain/discuss principles of safe handling of bodily fluids.	C					
Documents episode care in accordance with NMC and local guidelines for record keeping.	C					
Can demonstrate effective communication with MDT and other health care professionals involved in the patient's care.	C					

Assessment Sign-off

Supervised Administration Record: **Oral chemotherapy Medications**	**Practitioners name:**	
Supervised administration No.1	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.2	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.3	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Supervised administration No.4	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.5	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Appendix 2

Supervised Administration Record: Subcutaneous/intramuscular chemotherapy medications

Supervised Administration Record: **Subcutaneous/Intramuscular chemotherapy medications**	**Practitioner's Name:**

The practitioner can administer medications safely and discuss complications and ongoing care.
The practitioner and supervisor(s) should undertake observed assessments until they are both confident that competency has been achieved. A minimum of five assessments need to be undertaken and recorded.

For each supervised practice the trainee must be C = competent	**Min level**	**Supervised assessments**				
		1	**2**	**3**	**4**	**5**
1. Legal and ethical issues						
		Date	Date	Date	Date	Date
Demonstrates an understanding of their accountability and responsibility in relation to intramuscular/ subcutaneous chemotherapy medication administrations according to relevant legislation and their governing body.	C					
Hand hygiene as per local infection control guidelines maintained throughout the procedure.	C					
2. Pre-administration patient and carer education and assessment						
Introduces self to patient and carer.	C					
Discusses chemotherapy patient information leaflet with patient and carer.	C					
Asks the patient/carer what they understand about the treatment and provides opportunities for questioning/discussion throughout assessment.	C					
Reviews the treatment order and confirms the route is suitable for the agent.	C					
Ensures availability of prescribed and dispensed chemotherapy agents.	C					
Performs correct procedure for correctly identifying patient.	C					

Assesses patient perceptions/ history including toxicity assessment.	C					
Use appropriate strategies to reduce anxiety to increase understanding and encourage concordance.	C					
Communicates with patient proposed plan of care & obtains informed consent.	C					
Demonstrate appropriate selection and preparation of treatment environment and equipment including access to and functionality of emergency equipment • Vital signs monitoring equipment available • Appropriate use of ANTT as per local policy • Appropriate use of PPE • Cytotoxic spill kit is accessible • Eye wash kit available • Cytotoxic waste disposable containers accessible at point of treatment	C					
3. Administration preparation						
Assemble necessary equipment: • Follow local policy with regards to ANTT • Appropriate ANTT equipment as per local guidance • Selection of appropriate needle gauge	C					
4. Patient/ Treatment confirmation						
Ensures appropriate PPE as per local SACT policy.	C					
5. Administration Technique						
Confirms needle and syringe are firmly connected.	C					
Administer injection as per local guidelines via appropriate site.	C					

Dispose of cytotoxic waste in an appropriate manner conforming to local SACT waste management policy.	C					
6. Termination of procedure						
Documents episode of care conforming with NMC and local guidelines for records and record-keeping.	C					
Ensure appropriate methods of communication are utilised to communicate necessary information to the MDT and/or other health care professionals.	C					
Ensures patient is aware that therapeutic interaction is completed and has adequate follow-up arrangements and has discharge medications if required.	C					

Assessment Sign-off

Supervised Administration Record: **Subcutaneous/Intramuscular chemotherapy medications**	**Practitioner's Name:**	
Supervised administration No.1	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.2	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.3	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Supervised administration No.4	Date:	Signed:
Supervisor's comments		
Practitioner comments		
Supervised administration No.5	Date:	Signed:
Supervisor's comments		
Practitioner comments		

Appendix 3

SAFE HANDLING AND ADMINISTRATION ANNUAL RE-ACCREDITATION CERTIFICATE

Personal Development

- ☐ I have, within the previous 12 months, demonstrated continual professional development in relation to SACT handling and administration, (e.g. through attending workshop, local SACT update session, or conference presentations) and use evidence-based practice.

Policies and standards

I have read and understood the current:

- ☐ Medicines policy and relates to code of practice
- ☐ Standards for the safe use of Oral Anticancer medicines
- ☐ Operational policy regarding SACT administration
- ☐ Other (organisation specific) please name:

3. Pre-treatment Consultation – Communication Assessment Skills

- ☐ I conduct pre-treatment consultations in a holistic way through application of good communication and information delivery skills (e.g. obtain concerns before delivering information about SACT and check understanding).
- ☐ I ensure patient, parent or carers are aware of key SACT toxicities as listed within regimen consent forms.
- ☐ I reconfirm patient, parent or carer consent to SACT.

4. Pre-treatment Checks

- ☐ I ensure all pre-treatment investigations have been carried out and results are appropriate.
- ☐ I ensure SACT is prescribed according to approved protocols.

5. Route of Administration

- ☐ I am competent to safely deliver SACT via the following route(s) (tick as appropriate below) according to clinical assessments in this Passport and have maintained the competencies in the SACT section of the Career and Education Framework for CYP Cancer Nurses V3.0 2022
- ☐ Intravenous (Bolus).
- ☐ Intravenous (Infusion).
- ☐ Intramuscular/subcutaneous injection.
- ☐ Oral.
- ☐ Other (please state):

6. Post-treatment Checks

- ☐ I remain competent to dispense supportive medicine (where applicable).
- ☐ I ensure patient and carers can adhere with supportive medication administration requirements and I can provide related patient education (where necessary).
- ☐ I ensure patients,parents/carers are aware of 24-hour triage tool contact numbers.

7. Declarations

- ☐ I wish my name to remain on the Register of Clinicians accredited to administer SACT as per route(s) selected above
- ☐ I remain competent to administer SACT
- ☐ I remain competent to electronically document on the local e-prescribing system.
- ☐ I understand that my name will be removed from the register 12 months after the date of certification unless I apply for re-accreditation.
- ☐ I understand that if my name has been removed from the register, my rights to administer SACT on the local e-prescribing system may be revoked unless I apply for re-accreditation.

Signed: _____ Date: _____

Name: _____ (Nurse/Clinician)

Position: _____

Assessor

I have observed _____ perform the handling and administration of SACT and related assessment skills. I certify that they are safe to administer SACT independently (via the routes indicated above) according to this SACT Passport and the SACT competencies in the Career and Education Framework for CYP cancer Nurses V3.0 2022

Signed: _____ Date: _____

Name: _____ (Approved SACT Assessor)

Position: _____

Appendix 4

References

Armstrong T, Almadrones L, and Gilbert, M. (2005). Chemotherapy-induced Peripheral Neuropathy. Oncology Nursing Forum, 32 (2) pp. 305-311.

Barrett, B. and Linebaugh, J. (2008) Clinical Trials. In Perry, M. (2008). The chemotherapy source book. 4th ed. Philadelphia: Lippincott Williams and Wilkins.

Bloomfield J. and Tanay M. (2012). Chemotherapy in the Community: The Importance of Patient Assessment. British Journal of Community Nursing 17 (6) pp. 278-283

BMJ Best Practice, (2017). Tumour Lysis Syndrome. [online]
Available at: http://bestpractice.bmj.com/best-practice/monograph-pdf/936.pdf **Accessed:** 9th June 2022.

Breastcancer.org, (2017). Cold Caps and Scalp Cooling Systems. [online]
Available at: http://www.breastcancer.org/tips/hair_skin_nails/cold-caps **Accessed:** 9th June 2022.

Cancer Research UK, (2014a). Cancer Growth Blockers. [online]
Available at: www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/biological-therapy/types/cancer-growth-blockers **Accessed:** 9th June 2022.

Cancer Research UK (2014b) How Chemotherapy Works. [online[
Available at: How chemotherapy works | Cancer in general | Cancer Research UK **Accessed:** 9th June 2022.

Cancer Research UK, (2014c). Hair Loss, Hair Thinning and Cancer Drugs. [online]
Available at:: Hair loss, thinning and cancer treatment | Coping with cancer | Cancer Research UK **Accessed:** 9th June 2022.

Cancer Research UK (2020) Your blood, bone marrow and cancer drugs.
Available at: https://www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/cancer-drugs/side-effects/your-blood-and-bone-marrow **Accessed:** 9th June 2022.

Cancer Research UK, (2015). About Sex and Chemotherapy. [online]
Available at: Sex, sexuality and cancer | Cancer Research UK **Accessed:** 9th June 2022.

Cancer Research UK, (2015a). Chemotherapy Tablets and Capsules. [online]
Available at: Chemotherapy tablets and capsules | Cancer in general | Cancer Research UK **Accessed:** 9th June 2022.

Cancer Research UK (2016) Cancer the facts.
Available at: https://www.cancerresearchuk.org/about-cancer **Accessed:** 9th June 2022.

Cancer Research UK, (2017). Hormone Therapy. [online]
Available at: Hormone therapy | Cancer Research UK **Accessed:** 9th June 2022.

Cancer Research UK,(2020) How Cancers Grow? Online
Available at: https://www.cancerresearchuk.org/about-cancer/what-is-cancer/how-cancers-grow **Accessed:** 9th June 2022.

Canadian Cancer Society, (2017). Nervous System Damage and Chemotherapy. [online]
Available at: Nerve damage | Canadian Cancer Society **Accessed:** 9th June 2022.

Chemocare, (2002-2017). [online]
Available at: Chemocare.com **Accessed:** 9th June 2022.

Children's Cancer and Leukaemia Group (CCLG) 2016) Childhood Cancer.
Available at: https://www.cclg.org.uk/Childhood-cancer **Accessed:** 9th June 2022.

Children's Cancer and Leukaemia Group (CCLG) 2018) Outreach information Resource: Treatment Modalities.
Available at: https://www.cclg.org.uk/CSOIR/Treatment **Accessed:** 9th June 2022.

Children's Cancer and Leukaemia Group (CCLG) 2019)
Available at: https://www.cclg.org.uk/publications/Cancer-drugs-factsheets/ **Accessed:** 9th June 2022.

Children's Cancer and Leukaemia Group (CCLG) (2020) Telephone Triage Toolkit.
Available at: https://www.cclg.org.uk/triagetool **Accessed:** 17th November 2022

Children's Cancer and Leukaemia Group (CCLG) & Royal College of Nursing (RCN) (2022) Career and Education Framework for Children and Young People Cancer Nurses V3.0
Available at: www.cclg.org.uk/professionals/cyp-cancer-framework **Accessed:** 21st September 2022

Cramp, F. and Byron-Daniel, J. (2012). Exercise for the Management of Cancer-Related Fatigue in Adults. Cochrane Review. [online]
Available at: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006145.pub3/full **Accessed:** 9th June 2022.

Davey, R, Westhuizen, A. and Bowden N. (2015). Metastatic Melanoma Treatment: Combining Old and New Therapies. Critical Reviews in Oncology/Hematology, 98 (Feb 2016) pp. 242-253.

Department of Health and Human Services: Centers for Disease Control and Prevention: National Institute for Occupational Safety and Health, (2004). Preventing Occupational Exposures To Antineoplastic and Other Hazardous Drugs in Health Care Settings [online]
Available at: https://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf **Accessed:** 9th June 2022.

Department of Health. (2009) Reference guide to consent for examination or treatment. 2nd ed. .
Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_103643 **Accessed:** 9th June 2022.

Doellman D., Hadaway L., Bowe-Geddes L., Franklin M., LeDonne J., Papke-O'Donnell L., Pettit, J., Schulmeister L. and Stranz M. (2009). Infiltration and Extravasation: Update on Prevention and Management. Journal of Infusion Nursing, 32 (4), pp. 203-211.

Dougherty, L., and Lister, S. (2015). The Royal Marsden Manual of Clinical Nursing Procedures. John Wiley and Sons Inc: London, pp. 861-925.

EMC, (2017) (search engine) [online]
Available at: https://www.medicines.org.uk/emc/ **Accessed:** 9th June 2022.

European Oncology Nurses Society (EONS), (2007). European Oncology Nursing Society extravasation guidelines - PubMed **Available at:** https://doi.org/10.1016/j.ejon.2008.07.003 **Accessed:** 17th November 2022.

Fidalgo, J., Fabregat, L., Cervantes, A., Marguiles, A., Vidall, C. and Roila, F. (2012). Management of Chemotherapy Extravasation: ESMO-EONS Clinical Practice Guidelines. Annals of Oncology, 23 (7), pp. 67-73.

Franks, L. and Knowles, M. (2005) What is Cancer? In: Knowles, M.and Selby, P. (2005). Introduction to the cellular and molecular biology of cancer. 4th ed. Oxford: Oxford University Press

Friedman, C. and Postow, M. (2015). Managing Immunotherapy-related Side Effects. Oncology & Hematology Review, 11 (2), pp. 11(2):143-4. [online]
Available at: http://www.touchoncology.com/articles/managing-immunotherapy-related-side-effects **Accessed:** 9th June 2022.

General Medical Council. Consent: patients and doctors making decisions together. 2008. **Available at:** http://www.gmc-uk.org/guidance/ethical_guidance/consent_guidance_index.asp **Accessed:** 9th June 2022

Gilani, S. and Giridharan, S. (2014). Is it Safe for Pregnant Health-care Professionals to Handle Cytotoxic Drugs? A review of the Literature and Recommendations.Ecancermedicalscience, 8, p. 418. **Available at:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990661/ **Accessed:**9th June 2022.

Goldie, J. (2008) Drug Resistance. In: Perry, M. (2008). The chemotherapy source book. 4th ed. Philadelphia: Lippincott Williams and Wilkins.

Health and Safety Executive, (2015). Handling Cytotoxic Drugs in Isolators in NHS Pharmacies. [online] **Available at:** http://www.hse.gov.uk/pubns/ms37.htm **Accessed:** 9th June 2022.

Health and Safety Executive, (2017). Safe Handling of Cytotoxic Drugs in the Workplace. [online] **Available at:** http://www.hse.gov.uk/healthservices/safe-use-cytotoxic-drugs.htm **Accessed:** 9th June 2022.

Haddadin, N. and Cook, E. (2014). McGill: Jewish General Hospital [online] **Available at**: http://www.jgh.ca/uploads/Segal%20Cancer%20Centre/Body%20fluids%20pamphlet%20Eng- 2015.pdf **Accessed:** 29 April. 2021

Hesketh,R (2012) Introduction to Cancer Biology.England Cambridge University Press

International Society of Oncology Pharmacy Practitioners Standards Committee (ISOPP), (2007) ISOPP Standards of Practice: Safe Handling of Cytotoxics. [online] **Available at:** Standards of Practice | Oncology Pharmacy Practitioners | ISOPP **Accessed:** 9th June 2022.

Ikeda et al 2017 Ikeda, A., Jaishankar, D. and Krishnan, K. (2017). Tumor Lysis Syndrome Clinical Presentation [online] **Available at:** http://emedicine.medscape.com/article/282171-clinical **Accessed:** 9th June 2022.

Jones, G., Will, A., Jackson, G., Webb, N. and Rule, S. (2015). Guidelines for the Management of Tumour Lysis Syndrome in Adults and Children with Haematological Malignancies on behalf of the British Committee for Standards in Haematology. British Journal of Heamatology, 169 (5), pp. 661-671. [online] **Available at:** http://onlinelibrary.wiley.com/doi/10.1111/bjh.13403/full **Accessed:** 29 April 2021.

Kirkwood,J et al.(2021) A Cancer Journal for Clinicians.American Cancer Society. 62 https://doi.org/10.3322/caac.20132 309-339

Lee,Y.Tan,Y and Oon,C (2018) Molecular targeted therapy:Treating cancer with specificity. European Journal of Pharmacology 834 (1),188-196

Leveque, D. (2014). Subcutaneous Administration of Anticancer Agents. Anticancer Research, 34 (4), pp. 1579-1586. [online] **Available at:** http://ar.iiarjournals.org/content/34/4/1579.full **Accessed:** 9th June 2022.

Livshits, Z., Rao, R. and Smith, S. (2014). An Approach to Chemotherapy-Associated Toxicity. Emergency Medicine Clinics of North America, 1 (32), pp. 167-203. [online] **Available at:** An approach to chemotherapy-associated toxicity - PubMed (nih.gov) **Accessed:** 9th June 2022.

Multinational Association for Supportive Care in Cancer (MASCC), (2012). MASCC Oral Agent Teaching Tool (MOATT) [online] **Available at:** Home - MASCC **Accessed:** 9th June 2022.

Macmillan Cancer Support, (2012a). Hormone Therapies [online] **Available at:** www.macmillan.org.uk/information-and-support/treating/hormonal-therapies/hormonal-therapies-explained **Accessed:** 9th June 2022.

Macmillan Cancer Support, (2012b). Targeted (Biological) Therapies [online] **Available at:** Targeted therapies - Macmillan Cancer Support **Accessed:** 9th June 2022.

Macmillan Cancer Support (2017b). What is Chemotherapy? [online] **Available at:** Chemotherapy - types of chemotherapy and how it is given - Macmillan Cancer Support **Accessed:** 9th June 2022.

Mayo Clinic, (2016). What Cancers may be Treated with Monoclonal Antibody Drugs? [online] **Available at:** www.mayoclinic.org/diseases-conditions/cancer/in-depth/monoclonal-antibody/ART-20047808?pg=2 **Accessed:** 9th June 2022.

Melosky, B. (2014). Review of EGFR TKIs in Metastatic NSCLC, including Ongoing Trials. Frontiers in Oncology, 4, pp. 244: 1-4 [online] **Available at:** Review of EGFR TKIs in Metastatic NSCLC, Including Ongoing Trials - PMC (nih.gov) / **Accessed:** 9th June 2022.

Morgan, G. (2003). Chemotherapy and the Cell Cycle. Cancer Nursing Practice, 2 (1), pp. 27-30. **Available at:** http://journals.rcni.com/doi/abs/10.7748/cnp2003.02.2.1.27.c57 **Accessed:** 9th June 2022.

National Cancer Institute, (2011). Angiogenesis Inhibitors [online] **Available at:** www.cancer.gov/about-cancer/treatment/types/immunotherapy/angiogenesis-inhibitors-fact-sheet **Accessed:** 9th June 2022.

National Institute for Health and Care Excellence (NICE), (2012). Neutropenic Sepsis: Prevention and Management in People with Cancer [online] **Available at:** https://www.nice.org.uk/guidance/cg151. **Accessed:** 9th June 2022.

Nangia, J., Wang, T., Osborne, C., Niravath, P., Otte, K., Papish, S., Holmes, F., Abraham, J., Lacouture, M., Courtright, J., Paxman, R., Rude, M., Hilsenbeck, S., Osborne, C. and Rimawi,M. (2017). Effect of Scalp Cooling Device on Alopecia in Women Undergoing Chemotherapy for Breast Cancer: The SCALP Randomized Clinical Trial. JAMA, 317 (6), pp. 596-605.

National Cancer Institute, (2015). Cancer Vaccines. [online] **Available at:** Cancer Treatment Vaccines - Immunotherapy - NCI **Accessed:** 9th June 2022.

National Cancer Institute, (2017a). Targeted Cancer Therapies [online] **Available at:** Targeted Therapy for Cancer - NCI t **Accessed:** 9th June 2022.

National Cancer Institute, (2017b). Immunotherapy [online] **Available at:** Immunotherapy for Cancer - NCI **Accessed:** 9th June 2022.

National Chemotherapy Board, (2016). Consent for Systemic Anti-Cancer Therapy; Guidance Issued by the National Chemotherapy Board. [online] **Available at:** www.cancerresearchuk.org/sites/default/files/consent_guidance_doc_v2016-07_approved_by_ncb.pdf **Accessed:** 9th June 2022.

NHS England, (2015). Never Events List 2015/16 [online] **Available at:** NHS England » Never events **Accessed:** 9th June 2022.

NHS Improvement, (2014) Patient Safety Alert on Non-luer Spinal (Intrathecal) Devices for Chemotherapy [online] **Available at:** h NHS England » Patient safety alert on non-Luer spinal (intrathecal) devices for chemotherapy **Accessed:** 9th June 2022.

Oakley, C., Johnson, J. and Ream, E. (2010a). Developing an Intervention for Cancer Patients Prescribed Oral Chemotherapy: A Generic Patient Diary. European Journal of Cancer Care, 19 (1), pp. 21-28.

Oakley, C., Taylor, C., Ream, E., and Metcalfe, A. (2016). Avoidant Conversations about Death by Clinicians cause Delays in Reporting of Neutropenic Sepsis: Grounded Theory Study. Psycho-Oncology, [online] **Available at:** http://onlinelibrary.wiley.com/doi/10.1002/pon.4320/abstract doi: 10.1002/pon.4320. **Accessed:** 9th June 2022.

Oncology Nursing Society, (2016). Oral Adherence Toolkit. [online] Available at: ONS_Toolkit_ONLINE.pdf **Accessed:** 9th June 2022.

Park, S., Goldstein, D., Krishnan, A., Lin, C., Friedlander, M., Cassidy, J., Koltzenburg, M. and Kiernan, M. (2013). Chemotherapy-induced Peripheral Neurotoxicity: A Critical Analysis. Cancer Journal for Clinicians, 63 (6), pp. 419-437.

Perry, M. (2008) Scientific Basis of Cancer Chemotherapy. In: Perry, M. (2008). The chemotherapy source book. 4th ed. Philadelphia: Lippincott Williams and Wilkins.

Polovich, M., Olsen, M. and LeFebvre, K. (2014). Chemotherapy and biotherapy guidelines and recommendations for practice. 4th ed. Pittsburgh: Oncology Nursing Press. Chapters 1, 5 and 7. (HSE 2017: ISOPP 2007: Department of Health and Human Services 2004)

Priestman, T (2012). Cancer chemotherapy in clinical practice. 2nd ed. London: Springer.

Rahma, O. and Khleif, S.(2011) Biologic Basis of Molecular Targeted Therapy. In: Skeel, R.and Khleif, S. (2011). Handbook of cancer chemotherapy. 8th ed. Philadelphia: Lippincott Williams & Wilkins.

Regnier Denois, V., Poirson, J., Nourissat, A., Jacquin, J., Guastalla, J. and Chauvin, F. (2011). Adherence with Oral Chemotherapy: Results from a Qualitative Study of the Behaviour and Representations of Patients and Oncologists. European Journal of Cancer Care, 20 (4), pp. 520-527.

Rosello, S., Blasco I., Fabregat L., Cervantes, A. and Jordan, K. (2017). Management of Infusion Reactions to Systemic Anticancer Therapy: ESMO Clinical Practice Guidelines. Annals of Oncology 28 (4), pp. 100-118. [online] **Available at:** Management of infusion reactions to systemic anticancer therapy: ESMO Clinical Practice Guidelines - PubMed (nih.gov) **Accessed:** 9th June 2022.

Royal College of Nursing, (2016). Standards for Infusion Therapy. 4th ed. London: Royal College of Nursing. [online] **Available at:** Standards for infusion therapy | Infection prevention and control | Royal College of Nursing (rcn.org.uk) [**Accessed:** 9th June 2022.].

Rugo, H.S. Melin, HA, Voigt J (2017) Scalp Cooling with Adjuvant/Neoadjuvant Chemotherapy for Breast Cancer and the Risk of Scalp Metastases: Systematic Review and Meta-analysis Breast Cancer Research and Treatment, 163 (2), pp. 199-205.

Stein, G. and Pardee, A. (2004) Cell cycle and growth control: Biomolecular regulation and cancer. 2nd ed. New Jersey: John Wiley & Sons, Inc., pp. 4-6.

Treleaven, J., Cullis, J., Maynard, R., Bishop, E., Ainsworth-Smith, I., Roques, A., Webb, A., Favre, J. and Milligan, D. (2005). Obtaining Consent for Chemotherapy. British Journal of Hematology, 132 (5), pp. 552-559.
UK Oncology Nursing Society (UKONS), (2015) Acute Oncology Initial Management Guidelines [online] **Available at:**Acute Oncology Guidelines :: UK Acute Oncology Society **Accessed:** 9th June 2022.

Usborne,C and Mullard,A (2018) A review of systemic anticancer therapy in disease palliation. British Medical Bulletin 125 (1),43-53

Verbrugghe, M., Verhaeghe, S., Lauwaert, K., Beeckman, D. and Van Hecke, A. (2012). Determinants and Associated Factors Influencing Medication Adherence and Persistence to Oral Anticancer Drugs: A Systematic Review. Cancer Treatment Reviews, 39 (6), pp. 610-621.

Walker, S. (2016). Adherence to Oral Agents for Cancer. [online] **Available at:** Adherence to Oral Agents for Cancer. The Nurse's Role in an Evolving Phenomenon - PubMed (nih.gov) **Accessed:** 9th June 2022.

Macmillan website patient stories: speaking to patients and clinical reasoning:
Williams,G and Stoeber,K (2011).The cell cycle and cancer. The Journal of pathology.1 (1) https://doi.org/10.1002/path.3022

Children's Cancer and Leukaemia Group | the EXPERTS in CHILDHOOD CANCER

CCLG Legal Disclaimer

This publication contains information, advice, and guidance to help members of CCLG. It is intended for use within the UK, but readers are advised that practices may vary in each country and outside the UK.

The information in this booklet has been compiled from professional sources, but its accuracy is not guaranteed. Whilst every effort has been made to ensure CCLG provides accurate and expert information and guidance, it is impossible to predict all the circumstances in which it may be used. Accordingly, CCLG shall not be liable to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by what is contained in or left out of this workbook. Competencies of SACT administrators must be assessed locally by the employing NHS Trust.

Endorsed by: The United Kingdom Oncology Nursing Society (UKONS) 21st October 2022 Board Meeting

UKONS are fully acknowledged as the originators of the SACT Passport concept, and CCLG acknowledges the guidance and support offered to CCLG CYPONE in the adaptation of a version for paediatric services. UKONS Allows CCLG to use the concept of a SACT training passport, its style and structure, for a version to be adapted by the CCLG CYPONE group for paediatric cancer practice. A Memorandum of Understanding covers this arrangement. For the sake of clarity, UKONS holds no responsibility for the content or implementation of the SACT Passport for paediatric services. UKONS owns the intellectual property rights of the version for adult cancer services, and its future updated versions. (https://www.ukons.org/site/assets/files/1138/ukons_sact_electronic_passport_version_4.pdf)

Feedback

Users can provide feedback on this SACT Passport in two ways. Email: **info@cclg.org.uk** F.A.O. Chief Nurse and CYPONE Chair Live Feedback and opportunity to ask questions via CCLG Nursing Members on the CCLG Connect Platform in the CYPCN or CYPONE group sites is available at **www.cclg.org.uk/connect**

Published by
Children's Cancer and Leukaemia Group
3rd Floor, Century House
24 De Montfort Street
Leicester LE1 7GB

Registered charity in England and Wales (1182637) and Scotland (SC049948).

0333 050 7654
info@cclg.org.uk
www.cclg.org.uk

ChildrensCLG
CCLG_UK
CCLG_UK

UKONS Oncology Nursing Society