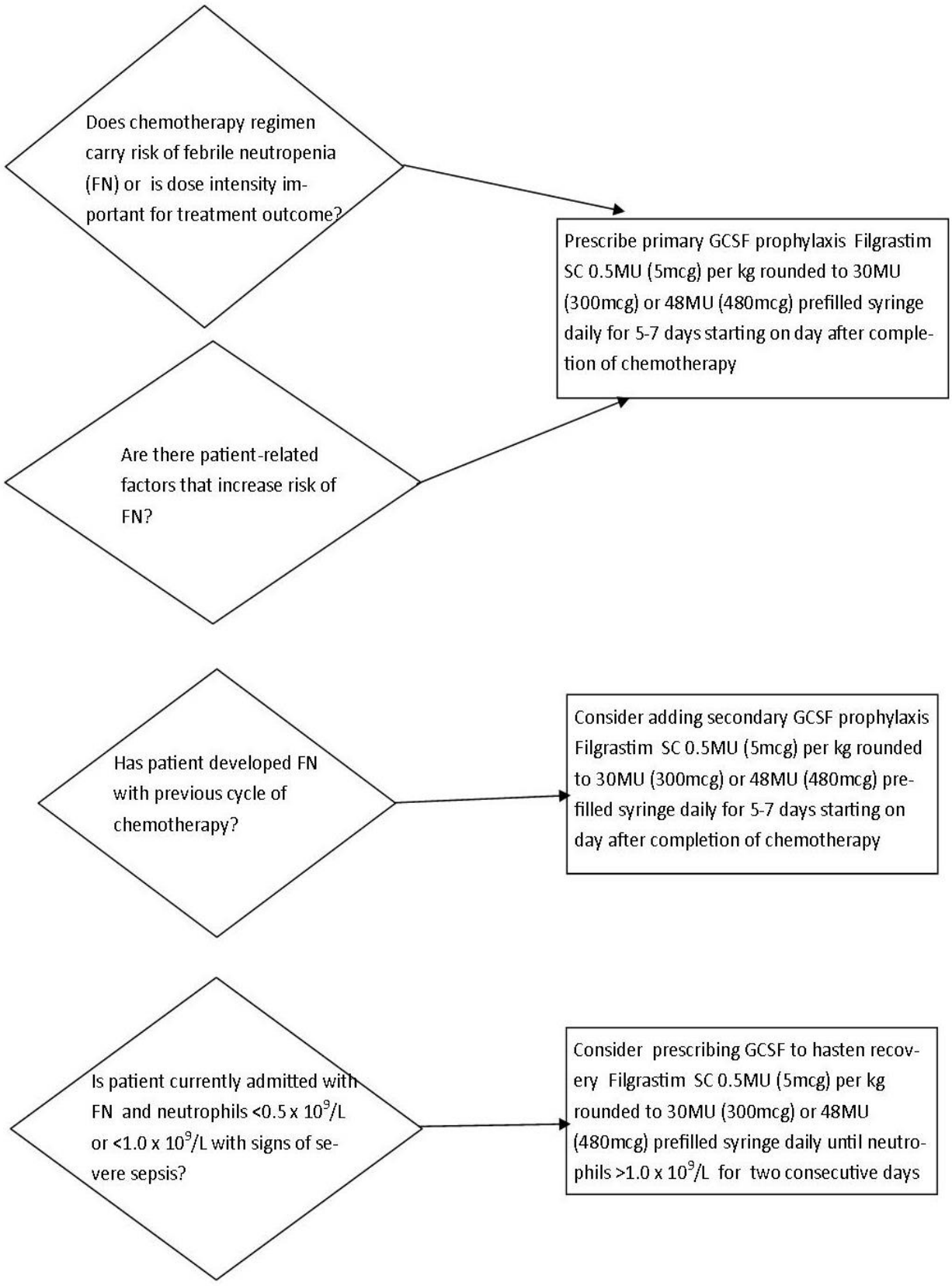
Royal Cornwall Hospitals
NHS Trust

Granulocyte Colony Stimulating Factors (GCSF) in Adult Haematology and Oncology Patients Clinical Guideline

V5.0

September 2025

Summary


Does chemotherapy regimen carry risk of febrile neutropenia (FN) or is dose intensity important for treatment outcome?
Prescribe primary GCSF prophylaxis Filgrastim SC 0.5MU (5mcg) per kg rounded to 30MU (300mcg) or 48MU (480mcg) prefilled syringe daily for 5-7 days starting on day after completion of chemotherapy
Are there patient-related factors that increase risk of FN?
Has patient developed FN with previous cycle of chemotherapy?
Consider adding secondary GCSF prophylaxis Filgrastim SC 0.5MU (5mcg) per kg rounded to 30MU (300mcg) or 48MU (480mcg) prefilled syringe daily for 5-7 days starting on day after completion of chemotherapy
Is patient currently admitted with FN and neutrophils <0.5 x 10^9/L or <1.0 x 10^9/L with signs of severe sepsis?
Consider prescribing GCSF to hasten recovery Filgrastim SC 0.5MU (5mcg) per kg rounded to 30MU (300mcg) or 48MU (480mcg) prefilled syringe daily until neutrophils >1.0 x 10^9/L for two consecutive days

1. Aim/Purpose of this Guideline

1.1. This guideline applies to adult haematology and oncology patients undergoing cancer chemotherapy or stem cell harvest.

1.2. This version supersedes any previous versions of this document.

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. Granulocyte Colony Stimulating Factors (GCSF) may be used in haematology or oncology patients in the following situations.

2.1.1. As primary prophylaxis where the chemotherapy regimen is associated with particular risk of febrile neutropenia and/or where maintaining dose intensity is important for treatment outcomes. In this setting GCSF will be incorporated into the Aria (prescribing system) protocol.

2.1.2. Primary prophylaxis may be considered where there are patient-related risk factors which increase the risk of febrile neutropenia e.g. age >65 years; poor performance status; previous febrile neutropenia with chemotherapy; pre-existing neutropenia or bone marrow involvement; poor nutritional status; extensive prior chemotherapy; previous irradiation to large volume of bone marrow; open wounds or active infections; multiple comorbid conditions; HIV infection.

2.1.3. Where it is part of the chemotherapy regimen itself, for example, the FLAG-IDA regimen.

2.1.4. Where it is part of a stem cell mobilisation protocol.

2.1.5. GCSF may be added as secondary prophylaxis for patients who experienced a neutropenic complication from a previous cycle and where a dose reduction would compromise disease-free or overall

survival, or treatment outcome.

2.1.6. During a period of hospitalization for febrile neutropenia GSCF may be considered where neutrophils are <0.5 x 10^9/L (or <1 x 10^9/L with signs of severe sepsis).

2.2. GCSF is not routinely recommended for prevention of neutropenic sepsis in patients undergoing chemotherapy. In accordance with NICE (Clinical Guideline 151), fluoroquinolone prophylaxis should be offered where significant neutropenia is anticipated, for the duration of neutropenia only.

2.3. Choice of agent.

2.3.1. Filgrastim is the agent routinely used at RCHT.

2.3.2. Lenograstim will be used for stem cell harvest patients.

2.3.3. Pegfilgrastim may only be used in accordance with criteria specified by NHSE and/or RCHT i.e. patients with learning difficulties; documented needle phobia; memory loss; dementia; arthritis of the hand which would prevent the patient self-injecting; or bleeding disorders.

2.4. Dosing of filgrastim.

2.4.1. 5mcg/kg (equivalent to 0.5MU) once daily by subcutaneous injection.

2.4.2. Doses should be rounded up or down to the most appropriate syringe size (300mcg [30MU] or 480mcg [48MU]).

2.4.3. It is common practice for a daily dose of 300mcg to be given. However, patients with weight ≥ 80kg may be given the 480mcg vial/syringe either initially or if they have an inadequate response to the standard dose.

2.4.4. The initial dose used in Aria regimens which include primary prophylaxis will be 480mcg for patients ≥ 80kg.

2.5. Dosing of GCSF for stem cell mobilisation: please refer to transplant SOPs.

2.6. Duration and Timing of G-CSF.

2.6.1. G-CSF is not recommended to start within 24 hours of chemotherapy administration.

2.6.2. A reasonable starting point for filgrastim is to start not less than 24 hours and not more than 72 hours after cytotoxic treatment is completed.

2.6.3. G-CSF injections should continue until the neutrophil count has recovered to > 1.0 x 109/L on two consecutive days. This will normally require a minimum of 5-7 days of treatment.

2.6.4. For Aria regimens which include primary prophylaxis, or where GCSF is an integral part of the regimen, the number of doses will be incorporated into the prescription.

2.7. GCSF is usually well tolerated; occasionally localized reactions may be observed at the injection site.

2.8. Musculoskeletal pain and headaches may be a problem in some patients. Patients should be warned of these effects. They can be minimized by the use of mild analgesia e.g., paracetamol, Non-Steroidal Anti-Inflammatory Drugs or mild opioids.

2.9. Other side effects are rare but may include transient hypotension, thrombocytopenia, disturbances in liver enzymes and serum uric acid, spleen enlargement. For a full list of potential side effects refer to product literature.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Use of GCSF in adult haematology and oncology patients
Lead	Systemic Anti-Cancer Treatment (SACT) MDT
Tool	Prescribing of GCSF can be identified through searching the Aria and/or JAC computer systems. Patients' notes will then be examined to establish the reason for prescribing and whether it was compliant with this guideline.
Frequency	The policy will be monitored as required based on commissioning decisions.
Reporting arrangements	Report to SACT MDT who will escalate any issues via Care Group
Acting on recommendations and Lead(s)	The SACT MDT will identify corrective actions required which will be recorded in meeting minutes. The SACT MDT will undertake action planning for any deficiencies and recommendations and will identify relevant personnel to act on these. Feedback on corrective actions will be requested to the MDT.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 3 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion and Human Rights Policy' or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Granulocyte Colony Stimulating Factors (GCSF) in Adult Haematology and Oncology Patients Clinical Guideline V5.0
This document replaces (exact title of previous version):	Granulocyte Colony Stimulating Factors (GCSF) in Adult Haematology and Oncology Patients Clinical Guideline V4.0
Date Issued/Approved:	September 2025
Date Valid From:	September 2025
Date Valid To:	September 2028
Directorate / Department responsible (author/owner):	Emma Nicholls (on behalf of the trust SACT MDT), Lead Cancer Pharmacist
Contact details:	01872 252984
Brief summary of contents:	Guidelines on when it is appropriate to use GSCF in haematology and oncology patients undergoing chemotherapy or stem cell harvest.
Suggested Keywords:	Granulocyte colony stimulating factor; GCSF; cytotoxic; chemotherapy; haematology; stem-cell
Target Audience:	**RCHT**: Yes **CFT**: No **CIOS ICB**: No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	SACT MDT
General Manager confirming approval processes:	Ian McGowan
Name of Governance Lead confirming approval by specialty and care group management meetings:	Susanne Atkinson
Links to key external standards:	NICE Clinical Guideline 151 Neutropenic sepsis: prevention and management of neutropenic sepsis in cancer patients.

Information Category	Detailed Information
Related Documents:	None required
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Cancer Services

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
27 December 2012	V1.0	Initial issue	Emma Nicholls, Lead Cancer Pharmacist
June 2015	V2.0	Review – new Trust template.	Emma Nicholls, Lead Cancer Pharmacist
05 February 2019	V3.0	Updated information re: commissioning of pegfilgrastim. Additional information around situations where GCSF may be used and dosing. Updated to current trust template.	Emma Nicholls, Lead Cancer Pharmacist
May 2022	V4.0	Review – new Trust template. No changes required.	Emma Nicholls, Lead Cancer Pharmacist
July 2025	V5.0	Review – new Trust template. No changes required.	Emma Nicholls, Lead Cancer Pharmacist

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Use of Granulocyte Colony Stimulating Factors (GCSF) in Adult Haematology and Oncology Patients Clinical Guideline V5.0
Directorate and service area:	General Surgery and Cancer Services, Cancer Services
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Emma Nicholls, Lead Cancer Pharmacist
Contact details:	01872 252984

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at?	To provide guidelines on the appropriate use of GCSF for haematology and oncology patients.
2. Policy Objectives	To provide guidelines on the appropriate use of GCSF for haematology and oncology patients
3. Policy Intended Outcomes	Appropriate prescribing of GSCF for haematology and oncology patients.
4. How will you measure each outcome?	Audit of the use of GCSF.
5. Who is intended to benefit from the policy?	Haematology and oncology patients and prescribers. The trust by ensuring cost-effective use of resources.
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No

Information Category	Detailed Information
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** SACT MDT
6c. What was the outcome of the consultation?	Approved
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	Treatment would be provided based on clinical condition regardless of age
Sex (male or female)	No	Treatment would be provided based on clinical condition regardless of sex
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	Treatment would be provided based on clinical condition regardless of gender status
Race	No	Treatment would be provided based on clinical condition regardless of race
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Allowance is made within policy for patients with disability
Religion or belief	No	Treatment would be provided based on clinical condition regardless of religion or belief
Marriage and civil partnership	No	Treatment would be provided based on clinical condition regardless of marital status
Pregnancy and maternity	No	Treatment would be provided based on clinical condition regardless of pregnancy

Protected Characteristic	(Yes or No)	Rationale
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	Treatment would be provided based on clinical condition regardless of sexual orientation

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Emma Nicholls, Lead Cancer Pharmacist.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis