NICE National Institute for Health and Care Excellence

NICE Pathways

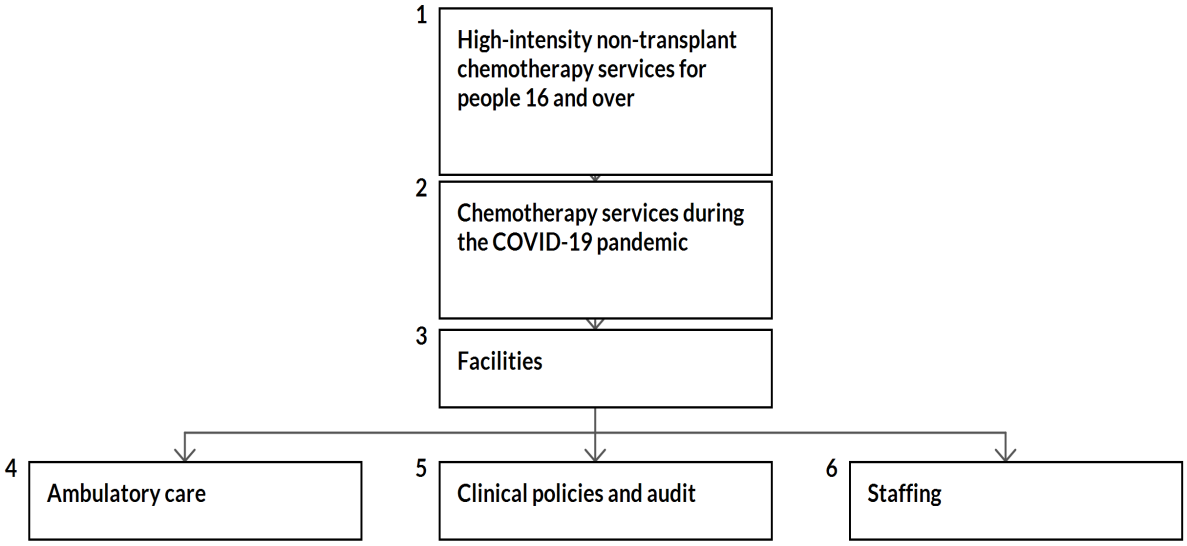
High-intensity non-transplant chemotherapy services for people 16 and over with blood and bone marrow cancers

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/blood-and-bone-marrow-cancers
NICE Pathway last updated: 09 December 2020

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 High-intensity non-transplant chemotherapy

The recommendations in this path apply to young people (16–24 years) and adults (over 24 years) with haematological malignancies:

- who are receiving high-intensity (non-transplant) chemotherapy for induction or re-induction of remission or consolidation, and are at risk of more than 7 days of neutropenia of 0.5×10^9/litre or lower (see levels of care [See page 8]) **or**
- who are receiving low- or intermediate-intensity chemotherapy but have comorbidities or frailty, or are at increased risk of other organ toxicities

This includes young people and adults having treatment for:

- acute myeloid leukaemia (including acute promyelocytic leukaemia)
- acute lymphoblastic leukaemia/lymphoblastic lymphoma
- high-risk/hypoplastic myelodysplastic syndrome
- Burkitt lymphoma
- bone marrow failure caused by other haematological malignancy, such as plasma cell leukaemia or other lymphoproliferative disorders.

These recommendations do not apply to adults and young people with relapsed or refractory lymphoma who are having salvage chemotherapy regimens likely to result in fewer than 7 days of neutropenia of 0.5×10^9/litre or lower, unless they have comorbidities or frailty, or are at increased risk of other organ toxicities.

2 Chemotherapy services during the COVID-19 pandemic

NICE has produced a COVID-19 rapid guideline on delivery of systemic anticancer treatments. It recommends changes to usual practice to maximise the safety of patients and protect staff from infection during the COVID-19 pandemic.

3 Facilities

Centre size

Haematology units that care for adults and young people who are receiving high-intensity

chemotherapy should provide high-intensity (non-transplant) chemotherapy for induction or re-induction of remission to a minimum of 10 patients per year who have new or relapsed haematological malignancies and who are at risk of more than 7 days of neutropenia of 0.5×10^9/litre or lower.

Isolation facilities

Inpatient isolation facilities for adults and young people who have haematological malignancies and are at risk of more than 7 days of neutropenia of 0.5×10^9/litre or lower should consist of a single-occupancy room with its own bathroom.

Consider installing clean-air systems into isolation facilities for adults and young people who have haematological malignancies and are at risk of more than 7 days of neutropenia of 0.5×10^9/litre or lower.

Other facilities

Ensure that there is provision for direct admission to the haematology ward or other facilities equipped to rapidly assess and manage potentially life-threatening complications of chemotherapy (such as neutropenic sepsis or bleeding) in adults and young people, according to agreed local protocols.

Ensure that there are specific beds available in a single dedicated ward within the hospital with the capacity to treat the planned volumes of patients.

Ensure that there is a designated area for outpatient care that reasonably protects the patient from transmission of infectious agents, and provides, as necessary, for patient isolation, long duration intravenous infusions, multiple medications, and/or blood component transfusions.

Ensure that there is rapid availability of blood counts and blood components for transfusion.

Ensure that there are on-site facilities for emergency cross-sectional imaging.

Ensure that cytotoxic drug reconstitution is centralised or organised at the pharmacy.

Ensure that there is on-site access to bronchoscopy, intensive care and support for adults and young people with renal failure.

4 Ambulatory care

In this interactive flowchart, ambulatory care is a planned care system in which adults and young people at risk of prolonged neutropenia are based at home or other specified accommodation. There should be specific safeguards to minimise the risk from potentially life-threatening complications of chemotherapy.

Consider ambulatory care for adults and young people who have haematological malignancies that are in remission and who are at risk of more than 7 days of neutropenia of 0.5×10^9/litre or lower.

Standard operating procedures for all aspects of an ambulatory care programme should be clearly defined and include the following:

- local protocols for patient eligibility, selection and consent
- procedures for patient monitoring
- access to a dedicated 24-hour advice line staffed by specifically trained haematology practitioners
- clear pathways for rapid hospital assessment in the event of neutropenic sepsis or other chemotherapy-related complications or toxicities
- clear pathways for re-admission to haematology units that care for adults and young people who are receiving high-intensity chemotherapy
- written and oral information for adults and young people and their family members or carers
- communication with primary care about the care the adult or young person is receiving, and their need for direct re-admission
- audit and evaluation of outcomes.

Take into account the following when assessing adults and young people to see if ambulatory care is suitable:

- patient preference
- comorbidities
- distance and travel times to treatment in case of neutropenic sepsis and other toxicities (see the NICE Pathway on neutropenic sepsis)
- the patient's or carer's understanding of the safety requirements of ambulatory care and their individual treatment plan
- access to and mode of transport

- accommodation and communication facilities
- carer support.

For more guidance on providing information to patients and discussing their preferences with them, see the NICE Pathway on patient experience in adult NHS services.

5 Clinical policies and audit

Clinical policies

All hospitals which give high-intensity (non-transplant) chemotherapy for induction or re-induction of remission, or consolidation, or which are likely to admit patients undergoing chemotherapy as medical emergencies, should have documented clinical policies, agreed with haematology and oncology staff, which clearly specify arrangements for the care of such patients.

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have written policies for:

- all clinical procedures **and**
- communication with the person's GP and other teams involved in treatment.

Audit

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should ensure that there is participation in audit of process and outcome.

6 Staffing

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have consultant-level specialist medical staff available 24 hours a day. This level of service demands the equivalent of at least 3 whole-time consultants, all full members of a single haematology multidisciplinary team and providing inpatient care at a single site.

Cover in haematology units that care for adults and young people who are receiving high-intensity chemotherapy should be provided by specialty trainees and specialty doctors who are:

- haematologists or oncologists
- involved in providing care to the patients being looked after by the centre
- familiar with and formally instructed in the unit protocols.

Central venous catheter insertion should be performed by an experienced specialist.

In haematology units that provide care for adults and young people who are receiving high-intensity chemotherapy:

- there should be adequate nursing staff to provide safe and effective care
- the 2003 NICE cancer service guidance on improving outcomes in haematological cancers recommended that 'The level of staffing required for neutropenic patients is equivalent to that in a high dependency unit'.

Nursing staff in haematology units that care for adults and young people who are receiving high-intensity chemotherapy should be competent to care for people with a severe and unpredictable clinical status. The nursing staff should be able to deal with indwelling venous catheters, recognise early symptoms of infection, and respond to potential crisis situations at all times.

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have access to consultant-level microbiological advice at all times. There should be access to specialist laboratory facilities for diagnosing fungal or other opportunistic pathogens.

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have access to a consultant clinical oncologist for consultation, although radiotherapy facilities do not need to be on site.

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have access to on-site advice from a specialist haematology pharmacist.

Haematology units that care for adults and young people who are receiving high-intensity chemotherapy should have dedicated clinical and administrative staff to support patient entry into local and nationally approved clinical trials and other prospective studies.

The Guideline Committee redefined levels 2b and 3 from the British Committee for Standards in Haematology (BCSH) guidelines on levels of care, and level 2 care from the original NICE cancer service guidance on improving outcomes in haematological cancers. The new definitions are based only on the depth and duration of expected severe neutropenia.

Low- to intermediate-intensity chemotherapy	All other chemotherapy not included in the definitions below.
High-intensity chemotherapy	Chemotherapy that is anticipated to result in severe neutropenia ($0.5x10^9$/litre or lower) for 7 or more days. In addition other potential organ toxicities, comorbidities and frailty should be considered. The relevant chemotherapy regimens are usually but not exclusively those used for curative treatment of acute myeloid leukaemia, high-risk myelodysplastic syndrome, acute lymphoblastic leukaemia, Burkitt lymphoma (and other rare aggressive lymphomas treated on Burkitt lymphoma-like protocols) and lymphoblastic lymphoma. Salvage treatments for other types of lymphoma would not usually be included in this definition.
Autologous and allogeneic haematopoietic stem cell transplantation (HSCT)	Previously referred to as high-dose therapy in the original 2003 NICE guidance on improving outcomes in haematological cancers. Commissioned centrally through specialised commissioning and a centre should meet FACT-JACIE accreditation standards.

Sources

Haematological cancers: improving outcomes (2016) NICE guideline NG47

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to

have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.