Health Services Programs
Outpatient Redesign Project

Haematology Oncology paediatric
Clinical Prioritisation Criteria (CPC)
Outpatient Referral Criteria

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Summary

This document contains the Clinical Prioritisation Criteria (CPC) for most frequently referred Haematology / oncology (paediatric) conditions.

Haematology / Oncology (paediatric) conditions

Please note this is not an exhaustive list of all conditions for outpatient services and does not exclude consideration for referral unless specifically stipulated in the exclusions section.

- A child with an Abdominal Mass
- All types of Leukaemia
- Cancer Survivorship – Long Term Follow Up
- Lymphadenopathy and/or Mediastinal Masses
- All Other Masses Suspected of Being a Malignancy
- Anaemia, Neutropenia, Thrombocytopenia and Other Blood Film Disorders
- Thrombotic and Bleeding Disorders

Out of scope

Not all conditions are covered by the CPC, as certain conditions may be considered out of scope or managed by other specialist services:

- histiocytic disorders
- acute idiopathic thrombocytopenic purpura – refer through emergency via general paediatrics.
- non-complicated iron deficiency - refer to paediatric medicine
- intracranial mass including brain and spinal cord tumours – please see Neurosurgery Brain / Spinal tumours CPC (paediatric) or contact on-call neurosurgery registrar via switch board. If unsure, please feel free to also contact paediatric haematology oncology for advice

Exclusions for public specialist outpatient services

Not all conditions are appropriate for referral into the South Australian public health system. The following are not routinely provided in a public specialist outpatient service:

- carriers of haemoglobinopathies (thalassemia and sickle cell disease)
  - GP Fact Sheet: Genetic Testing - Thalassaemia and Haemoglobinopathies
  - pregnant couples with screening bloods indicating a risk of thalassemia/haemoglobinopathy in the foetus should be referred to the Haematology molecular multidisciplinary meeting team at the Royal Adelaide Hospital via Health.CALHNCancerHaematologyReferrals@sa.gov.au. The aim of this is to clarify antenatal risk assessment or clarify diagnosis
  - carriers of haemoglobinopathies do not need to be referred to haematology
  - carriers of sickle cell disease do not need to be referred to haematology or genetics outpatients unless they are planning on having a family.
- haemochromatosis
  - Hereditary Haemochromatosis Fact Sheet
- G6PD deficiency
  - The Royal Children's Hospital Melbourne - G6PD deficiency

Emergency information

See the individual condition pages for more specific emergency information.

Feedback

We welcome your feedback on the Clinical Prioritisation Criteria and website, please email us any suggestions for improvement at Health.CPC@sa.gov.au.

Review

The Haematology / Oncology (paediatric) CPC is due for review in June, 2026.

Evidence statement

See Haematology / Oncology (paediatric) evidence statement *(evidence statement to be linked here).*

This document is for consultation only.

A Child with an Abdominal Mass

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) or seek emergent medical advice if in a remote region.

- mass with compressive symptoms, uncontrolled pain, irritability, unexplained neurological symptoms (Horner's in neuroblastoma), symptoms of bone marrow involvement such pallor, bruising, fever. Please contact paediatric surgery.
- if lymphoma is considered, contact the on call Paediatric Oncology/ Haematology team for an urgent clinic review or refer to ED. Do not wait for or do extensive blood work-up or other imaging

Contacts for clinical advice

For clinical advice, please telephone the Women's and Children's Hospital switchboard and ask to speak to the relevant haematology or oncology on-call doctor. In South Australia, cancer care for individuals aged <18 years is centralised to Women's and Children's Hospital.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Inclusions, exclusions and triage Categories

Inclusions

- unexplained hepatomegaly and/or splenomegaly

Exclusions

- palpable abdominal mass +/- pain (usually seen within 48 hours) – please refer to paediatric surgery (usually via the emergency department)

Triage categories

Category 1 (appointment clinically indicated within 30 days) **[although generally seen within 48-72hrs given urgency of most paediatric cancers]**

- palpable abdominal mass +/- pain– please refer to paediatric surgery (usually via the emergency department)
- hepatomegaly otherwise unexplained (usually seen within 2 weeks)
- unexplained splenomegaly WITH fever, sweat, breathlessness, pruritus, or weight loss

Category 2 (appointment clinically indicated within 90 days)

- asymptomatic splenomegaly

Category 3 (appointment clinically indicated within 365 days)

- nil

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf

- interpreter requirements
- family history
- important psychosocial history or other barrier to accessing care
- relevant medical history
- blood results
    - complete blood examination (CBE)
    - liver function tests (LFTs)
    - lactate dehydrogenase (LDH)
    - electrolytes, urea, creatinine (EUC)
    - calcium
    - phosphate
    - uric acid
- results of all prior relevant investigations

Additional information to assist triage categorisation

- coagulation studies
    - international normalised ratio (INR)
    - activated partial thromboplastin time (APTT)
    - fibrinogen
- any other relevant imaging including reports and hard copies (ultrasound, CT and MRI if completed)

Clinical management advice and resources

Clinical management advice

- In general, abdominal masses thought to be lymphoma will be seen by haematology oncology rapidly.
- In general, all other abdominal masses will be seen primarily by surgeons who will involve an oncologist in their investigation and treatment.

Clinical resources

- Optimal Care Pathway - Adolescents and young adults with cancer
- Optimal Care Pathway - children, adolescents and young adults with acute leukaemia
- Aboriginal and Torres Strait Islander patients will need a culturally appropriate referral. To view the optimal care pathway for Aboriginal and Torres Strait Islander people and the corresponding quick reference guide, visit:
    - Optimal Care Pathway for Aboriginal and Torres Strait Islander people with cancer
    - Optimal care pathway for Aboriginal and Torres Strait Islander people with cancer - Quick Reference Guide
- Cancer information and guidelines - Children's cancer

Consumer resources

- Cancer Council's Cancer Information and Support Service
- Leukaemia Foundation
- Cancer Australia

Key Words

abdominal mass, hepatomegaly and/or splenomegaly, cancer, malignancy, child, childhood, adolescent, young person

All Types of Leukaemia

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) or seek emergent medical advice if in a remote region.

- all cases of suspected acute leukaemia are a haematological emergency and should be discussed immediately with the on call Paediatric Oncology Consultant considered for admission to hospital either directly or via the emergency department
- unexplained fever (>38.5)

Contacts for clinical advice

For clinical advice, please telephone the Women's and Children's Hospital switchboard and ask to speak to the relevant haematology or oncology on-call doctor. In South Australia, cancer care for individuals aged <18 years is centralised to Women's and Children's Hospital.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Triage Categories

Triage categories

Category 1 (appointment clinically indicated within 30 days) **[although generally seen within 24hrs given urgency of most paediatric cancers]**

- confirmed or a suspected laboratory diagnosis of acute leukaemia should be referred on the same day to a specialist service and have an urgent assessment within 24 hours, unless advised otherwise by a specialist.
- review of a known patient with chicken pox or measles exposure. Must phone the Michael Rice Centre via switchboard. Patient will be seen within 72 hours of exposure.

Category 2 (appointment clinically indicated within 90 days)

- nil

Category 3 (appointment clinically indicated within 365 days)

- nil

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

Initial GP work up may include the below, however no tests are required apart from complete blood examination before referring for emergency assessment.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
- family history
- important psychosocial issues or other barriers to accessing care

- relevant medical history
- medications
- allergies
- blood results - do not wait for or do extensive blood work-up
    - complete blood examination (CBE)

Additional information to assist triage categorisation

- blood results
    - electrolytes, urea, creatinine (EUC)
    - liver function tests (LFTs)
    - lactate dehydrogenase (LDH)
    - calcium
    - phosphate
    - uric acid
    - coagulation studies
        - international normalised ratio (INR)
        - activated partial thromboplastin time (APTT)
        - fibrinogen

Clinical management advice and resources

Clinical management advice

All cases of suspected acute leukaemia are a haematological emergency and should be discussed immediately with the on call Paediatric Oncology Consultant considered for admission to hospital either directly or via the emergency department

Do not wait for or do extensive blood work-up before referring to emergency.

Clinical resources

- Optimal Care Pathway - Adolescents and young adults with cancer
- Optimal Care Pathway - children, adolescents and young adults with acute leukaemia
- Aboriginal and Torres Strait Islander patients will need a culturally appropriate referral. To view the optimal care pathway for Aboriginal and Torres Strait Islander people and the corresponding quick reference guide, visit:
    - Optimal Care Pathway for Aboriginal and Torres Strait Islander people with cancer
    - Optimal care pathway for Aboriginal and Torres Strait Islander people with cancer - Quick Reference Guide
- Cancer information and guidelines - Children's cancer

Consumer resources

- Cancer Council's Cancer Information and Support Service
- Leukaemia Foundation
- Cancer Australia

Key Words

acute leukaemia, leukaemia, suspected leukaemia, paediatric, young adults, adolescent, cancer, oncology, haematology, blood cancer

Cancer Survivorship – Long Term Follow Up

Contacts for clinical advice

For clinical advice, please telephone the cancer survivorship nurse.

Women's and Children's Hospital Network

- Michael Rice Centre for Haematology and Oncology (08) 81617411 within business hours

Inclusions, exclusions and triage Categories

Inclusions

- any patient previously treated for malignancy

Exclusions

- any patient >18 years old

Triage categories

Category 1 (appointment clinically indicated within 30 days)

- nil

Category 2 (appointment clinically indicated within 90 days)

- patient with any active medical issues

Category 3 (appointment clinically indicated within 365 days)

- patient with no identified active medical issues

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
  - history of tumour
  - history of treatment
  - location of treatment (geographical)
  - contact details of previous and current medical teams

Additional information to assist triage categorisation

- any blood test or imaging in the last 2 years
- growth charts

Clinical management advice and resources

Clinical management advice

Many survivors of childhood cancer need lifelong monitoring for late effects of treatment.

Clinical resources

- Children's Oncology Group - Long term follow-up guidelines for survivors of childhood,

adolescent, and young adult cancers

Consumer resources

- Children's Oncology Group - Long term follow-up guidelines for survivors of childhood, adolescent, and young adult cancers Nort

Key Words

cancer, malignancy, cancer survivorship, childhood cancer, long term follow up, child, young adult, adolescent

Lymphadenopathy and/ or Mediastinal Masses

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) or seek emergent medical advice if in a remote region.

- unwell, acute breathlessness, rapidly enlarging abdominal distension, rapidly enlarging lymphadenopathy, distended veins/ venous congestion of upper chest or face suggestive of superior vena cava (SVC) obstruction.
- if lymphoma or other solid malignancy is considered, contact the on call Paediatric/ Oncology/ Haematology team for an urgent clinic review or refer to emergency, do not wait for or do extensive blood work-up

Contacts for clinical advice

For clinical advice, please telephone the Women's and Children's Hospital switchboard and ask to speak to the relevant haematology or oncology on-call doctor. In South Australia, cancer care for individuals aged <18 years is centralised to Women's and Children's Hospital.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Inclusions, exclusions and triage Categories

Inclusions

- lymphadenopathy (acute and chronic) not infectious in nature
- suspected or confirmed lymphoma

Exclusions

- incidental chest x-ray findings which may be more appropriately referred to respiratory
- lymphadenopathy which is likely to be infectious in nature (refer to infectious diseases)
  - an example of these includes rapidly growing solitary tender lymph node which may be red and associated with a fever

Triage categories

Category 1 (appointment clinically indicated within 30 days) **[although generally seen within 48-72hrs given urgency of most paediatric cancers]**

- progressive enlargement of lymph nodes over weeks or months with no obvious cause, night sweats, unexplained weight loss, fevers, pruritus or increasing breathlessness over time.
- single lymph node >2cm in diameter AND any of the following:
  - absence of a clear infectious cause
  - persistence of significantly enlarged nodes (>2cms diameter) for 6 weeks or more with no decrease in size
  - widespread distribution
  - abnormal consistency (firm or hard) or non-mobile
  - absence of pain
- supraclavicular lymph nodes, associated splenomegaly, night sweats, bone pain or limp or presence of mediastinal widening on chest radiograph.
- progressive respiratory symptoms of unknown aetiology, with systemic symptoms such as fever, night sweats, loss of weight.

Category 2 (appointment clinically indicated within 90 days)

- chronic lymphadenopathy (> 6 weeks) of unknown cause and not meeting criteria listed in category 1.

Category 3 (appointment clinically indicated within 365 days)

- nil

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
- family history
- important Psychosocial history or other barrier to accessing care
- relevant medical history
- history:
  - characteristics of lymph node (onset, size, duration, pain, and distribution)
  - recent infections (sore throat, earache, rash)
  - constitutional symptoms (fever, night sweats, weight loss)
  - respiratory symptoms
- blood results
  - complete blood examination (CBE)
  - liver function tests (LFTs)
  - lactate dehydrogenase (LDH)
  - electrolytes, urea, creatinine (EUC)
  - c-reactive protein (CRP)
- serology
  - Epstein-Barr virus (EBV)
  - Cytomegalovirus (CMV)
- examination
  - lymph node – size, site, colour, tender/non- tender, mobile, distribution, fluctuant, consistency
- chest x-ray
- results of all prior relevant investigations

Additional information to assist triage categorisation

- ultrasound (US) or computed tomography (CT) scan (if completed)

Clinical management advice and resources

Clinical management advice

Enlarged lymph nodes (LN) are common and usually the result of inflammation or inflammatory processes.

Concern regarding possible malignancy warrants careful assessment and referral.

Lymph nodes < 2cm in diameter, reducing or fluctuating in size are unlikely to be associated with malignancy in the absence of other suspicious features

Please DO NOT arrange for a fine needle aspirate of any paediatric lymph node (because FNA lacks sensitivity and provides insufficient information for accurate histological diagnosis in lymphoma).

Please DO NOT commence steroids even if respiratory compromise, unless discussed with team prior. This can mask the diagnosis, lead to tumour lysis syndrome and compromise definitive diagnosis and treatment.

Clinical resources

- nil

Consumer resources

- nil

Key Words

lymphoma, solid malignancy, lymphadenopathy, chronic lymphadenopathy, malignancy, cancer, oncology, haematology, blood cancer, childhood, adolescent, young adult

All Other Masses Suspected of Being a Malignancy

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) for relevant speciality assessment or seek emergent medical advice if in a remote region.

- any suspected pathological fracture, contact paediatric orthopaedic surgery for an urgent clinic review or refer to emergency
- if a central nervous system tumour is suspected, or there is neurological compromise, contact paediatric neurosurgery for an urgent clinic review or refer to emergency
  - for example
    - collapse/seizure/altered level of consciousness/new neurological deficit
    - severe and increasing headache
    - symptoms or signs of raised intracranial pressure
- any mass with or symptoms of:
  - neurovascular compromise
  - significant functional impairment
  - pain uncontrolled by simple analgesia

Contacts for clinical advice

For clinical advice, please telephone the Women's and Children's Hospital switchboard and ask to speak to the relevant haematology or oncology on-call doctor. In South Australia, cancer care for individuals aged <18 years is centralised to Women's and Children's Hospital. Queries relating to the surgical management of bone tumours can also be directed to the *Sarcoma and Bone Tumour Unit* at Flinders Medical Centre.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Southern Adelaide Local Health Network – *Bone Tumours only*

- Flinders Medical Centre (08) 82045511

Inclusions, exclusions and triage Categories

Inclusions

- mass of uncertain origin

Exclusions

- musculoskeletal tumours should primarily be referred to orthopaedics
- brain / spinal tumour – initial referral to paediatric neurosurgery often via emergency department

Triage categories

Category 1 (appointment clinically indicated within 30 days) **[although generally seen within 48-72hrs given urgency of most paediatric cancers]**

- unexplained enlarging soft tissue mass
- suspected malignancy with presence of red flags:
  - scrotal swelling
  - blood stained vaginal discharge
  - back pain, bone pain, weakness, limp
  - pain that wakes overnight

    - urinary retention
    - proptosis
    - persistent/ recurrent bloody/ purulent discharge from ear/ nose. Incidental lytic lesion on imaging

Category 2 (appointment clinically indicated within 90 days)

- slow growing suspicious lesion
- continued care or review of a known patient on treatment
- new non-urgent cancer related problem in known patient.
- cancer patients whose ongoing care is being transferred from elsewhere

Category 3 (appointment clinically indicated within 365 days)

- nil

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
- family history
- important psychosocial history or other barrier to accessing care
- relevant medical history
- blood results
    - complete blood examination (CBE)
    - liver function tests (LFTs)
    - lactate dehydrogenase (LDH)
    - electrolytes, urea, creatinine (EUC)
    - c-reactive protein (CRP)
- results of all prior relevant investigations

Additional information to assist triage categorisation

- ultrasound (US), X-ray, computed tomography (CT) scan results as available

Clinical management advice and resources

Clinical management advice

Refer as soon as suspicion. This may include bony masses or lesions, enlarging supraclavicular masses, localised pain with no obvious diagnoses, recurrent presentations, a child who is not right.

There is no need for a tissue diagnosis or multiple investigations. This includes fine needle aspirates. We will arrange the appropriate investigations and biopsies. If tests have been ordered, please send ALL results with referral including histopathology and imaging.

If there are any abnormal findings on imaging, call the paediatric oncology fellow or paediatric oncology consultant on-call.

Clinical resources

- Optimal Care Pathway - Adolescents and young adults with cancer
- Aboriginal and Torres Strait Islander patients will need a culturally appropriate referral. To view the optimal care pathway for Aboriginal and Torres Strait Islander people and the corresponding quick reference guide, visit:
    - Optimal Care Pathway for Aboriginal and Torres Strait Islander people with cancer
    - Optimal care pathway for Aboriginal and Torres Strait Islander people with cancer - Quick Reference Guide

Consumer resources

- Childhood Cancer Association

Key Words

cancer, malignancy, solid mass, solid tumour, solid cancer, childhood, young adult, adolescent

Anaemia, Neutropenia, Thrombocytopenia and Other Blood Film Disorders

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) or seek emergent medical advice if in a remote region.

- if pancytopenia is present or any bicytopenia with large lymph nodes, hepatomegaly and/ or splenomegaly
- ongoing bleeding
- severe anaemia with signs of cardiac failure and/ or other organ dysfunction
- fever >38.5 with neutropenia
- first presentation acute immune thrombocytopenic purpura (ITP) - refer to emergency via general paediatrics

Contacts for clinical advice

For clinical advice, please telephone the relevant metropolitan Local Health Network switchboard and ask to speak to the relevant haematology or oncology on call doctor.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Inclusions, exclusions and triage categories

Inclusions

- severe anaemia including thalassemia, red membrane disorders, red cell enzyme disorders, autoimmune disorders)
- sickle cell disease
- thrombocytopenia platelets <20 x 10^9/L
- unexplained haemolytic anaemia
- persistent (>6 months) moderate anaemia (Hb 60-100g/L) of any cause including thalassaemia, red cell membrane disorder, red cell enzyme disorders, and autoimmune haemolytic anaemia
- uncertain diagnosis, abnormal white cell count, atypical blood film
- persistent (> 6 months duration) mild cytopenia with no clinical symptoms, signs, or complications

Exclusions

- mild presumed familial (ethnic) neutropenia
- iron deficiency – please refer to paediatric medicine
- first presentation acute immune thrombocytopenic purpura (ITP) - refer to emergency via general paediatrics
- isolated neutropenia <3months duration
- sickle cell trait/ carrier

Triage categories

Category 1 (appointment clinically indicated within 30 days)

- severe anaemia (haemoglobin Hb <60g/L) including
  - thalassaemia
  - red cell membrane disorders, for example, hereditary spherocytosis
  - red cell enzyme disorders, for example, pyruvate kinase deficiency
  - autoimmune haemolytic anaemia
- sickle cell disease

Government of South Australia
SA Health

- thrombocytopenia platelets <20 x 10^9/L

Patients will likely be seen in significantly less than 30 days

Category 2 (appointment clinically indicated within 90 days)

- unexplained haemolytic anaemia
- any of the following:
  - uncertain diagnosis
  - abnormal white cell count
  - atypical blood film
  - persistent moderate anaemia (Hb 60-100g/L) of any cause including thalassaemia, red cell membrane disorder, red cell enzyme disorders, and autoimmune haemolytic anaemia
  - any other cytopenia that fails to improve in 6 months

Regularly monitor complete blood examination, should the cytopenia progress to category 1 referral parameters.

Category 3 (appointment clinically indicated within 365 days)

- persistent (> 6 months duration) mild cytopenia with no clinical symptoms, signs, or complications

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
- family history
- important developmental or psychosocial issues or other barriers to accessing care
- relevant medical history
- medications
- allergies
- pathology results:

all referrals:

- complete blood examination (CBE)
- electrolytes, urea, creatinine (EUC)
- liver function tests (LFTs)
- lactate dehydrogenase (LDH)
- uric acid (for neutropenia)
- serology (for clinical suspicion):
  - Epstein-Barr Virus (EBV)
  - cytomegalovirus (CMV)

anaemia referrals:

- ferritin
- reticulocyte count
- direct antiglobulin test (DAT)

- ○ haemoglobin variant analysis (if microcytic)

Additional information to assist triage categorisation

- immunoglobulin G (IgG), immunoglobulin A (IgA), immunoglobulin G (IgG) (for neutropenia and thrombocytopenia)
- antinuclear antibodies (ANA)
- C-reactive protein (CRP)
- B12 & folate if macrocytic

Clinical management advice and resources

Clinical management advice

Regularly monitor complete blood examination, should the cytopenia progress to category 1 referral parameters.

Neutropenia is defined as the absolute neutrophil count (ANC) of <1.5 x 10^9/L, except for neonates within the first week of life and infants where the lower limit of normal is 5.0 x 10^9/L and 1.0 x 10^9/L, respectively.

Neutropenia is categorised as:

- Mild –ANC 1.0-1.5 x 10^9/L
- Moderate – ANC 0.5-1.0 x 10^9/L
- Marked – ANC <0.5 x 10^9/L

Benign ethnic neutropenia (BEN) is an inherited neutropenia mainly occurring among people of African or Middle Eastern descent. The neutrophil count in this condition is usually between 1-1.5 x 10^9/L however it can occasionally be less than 1.0 x 10^9/L. and is not usually associated with an increased risk of infections.

Thrombocytopenia is defined as platelet count <150 x 10^9/L. Most patients with platelet count of >50 x 10^9/L are asymptomatic.

Thrombocytopenia is categorised as:

- ○ Mild: platelet count 100-140 x 10^9/uL
- ○ Moderate: 50-100 x 10^9/uL
- ○ Marked: <50 x 10^9/uL

Clinical resources

- SA Health - Anaemia management
- SA Health - Iron deficiency and iron therapy
- Women's and Children's Hospital Iron Deficiency Referral Guidelines
- The Royal Children's Hospital Melbourne - Iron deficiency clinical practice guideline
- National Blood Authority Australia - Paediatric and neonatal iron deficiency anaemia guide
- Australian Red Cross Lifeblood - Treating iron deficiency anaemia

Consumer resources

- Australian Red Cross Lifeblood - Patients
- SA Health - Iron deficiency and iron therapy

Key Words

Anaemia, neutropenia, thrombocytopenia, blood film disorders, thalassaemia, red cell membrane disorders, red cell enzyme disorders, hereditary spherocytosis, pyruvate kinase deficiency, autoimmune haemolytic anaemia, sickle cell disease, cytopenia

Thrombotic and Bleeding Disorders

Referral to emergency

If any of the following are present or suspected, please refer the patient to the emergency department (via ambulance if necessary) or seek emergent medical advice if in a remote region.

- active and uncontrolled bleeding which is unrelated to trauma or other known causes
- suspected large thrombosis or pulmonary embolism

Contacts for clinical advice

For clinical advice, please telephone the relevant metropolitan Local Health Network switchboard and ask to speak to the relevant haematology or oncology on call doctor.

Women's and Children's Hospital Network

- Women's and Children's Hospital (08) 8161 7000

Inclusions, exclusions and triage Categories

Inclusions

- any episode of unprovoked thrombosis
- patients with bleeding and abnormal coagulation screening tests
- bleeding and a family history of severe bleeding disorder
- patient with recurrent bleeding and normal coagulation screening tests
- patient with no bleeding and a family history of mild or severe bleeding disorder
- patient with family history or incidental finding of thrombosis risk
- patient with no bleeding and an uncertain family history of a bleeding disorder

Exclusions

- bleeding with known cause for example post-surgical
- first episode of provoked thrombosis which are associated with recent (<4-6 weeks) surgery, immobility or trauma are usually not reviewed in the haematology clinic
- most patients with superficial thrombophlebitis
- advice regarding anticoagulation can be sought from the duty haematologist but does not require a clinic review

Triage categories

Category 1 (appointment clinically indicated within 30 days)

- any episodes of unprovoked thrombosis
- patient with bleeding and abnormal coagulation screening tests
- patient with bleeding and a family history of severe bleeding disorder

Category 2 (appointment clinically indicated within 90 days)

- patient with family history or incidental finding of thrombosis risk
- patient with recurrent bleeding and normal coagulation screening tests
- patient with no bleeding and a family history of mild or severe bleeding disorder

Category 3 (appointment clinically indicated within 365 days)

- patient with no bleeding and an uncertain family history of a bleeding disorder

Referral information

For information on referral forms and how to import them, please view general referral information.

Essential referral information

Completion required before first appointment to ensure patients are ready for care. Please indicate in the referral if the patient is unable to access mandatory tests or investigations as they incur a cost or are unavailable locally.

- identifies as Aboriginal and/or Torres Strait Islander
- identify within your referral if you feel your patient is from a vulnerable population, under guardianship/out-of-home care arrangements and/or requires a third party to receive correspondence on their behalf
- interpreter requirements
- important psychosocial history or other barriers to accessing care
- relevant medical history
  - history of bleeding diathesis - gum bleeding post brushing, menorrhagia, spontaneous haematomas, bleeding post-surgical intervention, hemarthrosis, gastrointestinal and intracranial bleeding
- family history of thrombotic or bleeding disorders
- blood tests:
  - complete blood examination (CBE)
  - liver function tests (LFTs)
  - lactate dehydrogenase (LDH)
  - coagulation studies
    - international normalised ratio (INR)
    - activated partial thromboplastin time (APTT)
    - fibrinogen
  - Von Willebrand Factor Studies (if mucosal bleeding present)
  - coagulation assays appropriate to family history, for example factor assays for haemophilia
- any available imaging for previous thrombosis

Additional information to assist triage categorisation

- platelet function test
- any thrombophilia workup

Clinical management advice and resources

Clinical management advice

Antifibrinolytics (Tranexamic acid) is often helpful for mucosal bleeding (the most common form of bleeding) – mouth, epistaxis, menorrhagia. This may be given alone or as an adjunct therapy to Desmopressin/factor concentrate. For dose recommendations, see the Royal Children's Hospital Melbourne - Von Willebrand Disease vWD Clinical Practice Guideline

Prompt treatment of joint and muscle bleeding helps to prevent long term damage. If a bleed is identified, first, follow recommendations for clotting factor replacement when a joint or muscle bleed is suspected. See the Royal Children's Hospital - Haemophilia Clinical Practice Guideline for guidance.

For muscle and joint bleeds, the PRICE treatment strategies will limit bleeding and reduce pain. This should be initiated immediately.

- Protection – immobilise the affected area in a position of comfort for example a splint, slings, or crutches.
- Rest - rest the affected limb.

- Ice - ice can be used for 10 to 20 minutes, every 1 to 2 hours for the first 24 to 48 hours.
- Compression - compression limits the amount of bleeding. Compression can be applied to the area by use of an elastic bandage (ACE wrap) to wrap the injured joint. Wrap the joint from the lowest point to the highest point with gentle tension.
- Elevation - elevate (raise) the injured area to a position higher than the heart. Elevate the area often for the next 2 to 3 days

Analgesia

- do not use products containing aspirin or NSAIDS (for example, ibuprofen, diclofenac) as they may worsen bleeding
- paracetamol may be sufficient. Opiates can be used for severe pain
- splinting and immobilisation is an effective adjunct for reducing pain

Clinical resources

- Haemophilia Foundation Australia
- Royal Children's Hospital Melbourne - Von Willebrand Disease vWD Clinical Practice Guideline
- Royal Children's Hospital - Haemophilia Clinical Practice Guideline
- The Royal Children's Hospital Melbourne - Thromboprophylaxis Guideline
- The Royal Children's Hospital Melbourne - Anticoagulation therapy
- Australian Haemophilia Centre Directors' Organisation (AHCDO)

Consumer resources

- Haemophilia Foundation Australia - Patient resources
- SicKids - Thrombosis learning hub

Key Words

Thrombosis, unprovoked thrombosis, haemophilia, von Willebrand disease, haemophilia A, haemophilia B, bleeding disorder, child, adolescent, young person, haematological disorder

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