Guideline

Investigation and Emergency Management of Heavy Menstrual Bleeding in Adolescents

Document ID	CHQ-GDL-00754		
Version No.	1.0	**Standard 8** Recognising and Responding to Acute Deterioration	
Risk Rating	Low		
Primary Document	N/A		
Custodian	Deputy Director, Emergency Department	**Approval date**	06/02/2026
Accountable Officer	Chief Operating Officer	**Effective date**	12/02/2026
Applicable to	QH Medical and Nursing Staff	**Review date**	06/02/2031

HUMAN RIGHTS

This governance document has been human rights compatibility assessed. Any identified limitations are assessed as reasonable, necessary, and justifiable under section 13 of the Act. Care is delivered in accordance with human rights principles. Where rights may be limited—such as during admission or invasive procedures—clinicians use the least-restrictive, evidence-based approach, obtain and document informed consent, and record the rationale for decisions.

PURPOSE

This document provides clinical guidance for all staff involved in the investigation, care, and management of children and adolescents presenting to an Emergency Department (ED) with signs and symptoms suggestive of heavy menstrual bleeding (HMB).

SCOPE

This guideline applies to all staff involved in the investigation, care, and management of children and adolescents presenting to an Emergency Department (ED) with signs and symptoms suggestive of heavy menstrual bleeding (HMB).

GUIDELINE

Heavy menstrual bleeding (HMB), historically referred to as menorrhagia, is a common complaint estimated to affect 15 to 40% of children and adolescents.[1,2,3,4,5,6,34] In this age group, HMB is most frequently secondary anovulatory cycles caused by immaturity of the hypothalamic-pituitary ovarian (HPO) axis.[1,2,3,5,7,8,9] When reviewing a child or adolescent with HMB, it is important to consider other potential causes such as polycystic ovarian syndrome (PCOS), endometriosis, pregnancy, trauma, infection, thyroid disorders, and bleeding disorders.[1,2,3,5,7] HMB may be the first presentation of a bleeding disorder with literature suggesting that bleeding disorders are present in anywhere between 7 and 62% of patients with HMB.[12,31,32]

In patients presenting with lower abdominal pain, please also refer to the separate guideline, Acute Abdominal Pain – Emergency Management in Children and the Menstrual Management of Children and Adolescents as other causes must be considered.

DEFINITION OF HEAVY MENSTRUAL BLEEDING

HMB is defined as excessive menstrual blood loss that interferes with a person's physical, emotional, social and material quality of life.[3,4,10,11,12] Signs and symptoms consistent with HMB include:

- Bleeding lasting greater than 7 days[5,8,13,14]
- Losing greater than 80 ml or 4 tablespoons of blood per menstrual cycle, note that this estimation is difficult to measure and can be of limited usefulness[3,13,14,15]
- Passing clots greater than 2 cm[3,13,14,16]
- The need to change sanitary products every 1-2 hours[3,5,8,3,14]
- Using greater than 3-6 standard sanitary products per day or greater than 10-15 per menstrual cycle[17]
- Using multiple sanitary products to safeguard against overflow e.g., use of a pad and tampon at once[3,14]
- Soiling clothing or soiling bedsheets at night[3,13,14]
- Symptoms of iron deficiency or iron deficiency anaemia e.g., fatigue, light headedness, decreased athletic performance, reduced cognitive performance, sleep disturbance, restless legs[15,18]
- Disruption to lifestyle e.g., school absences, poor concentration, limitations on social activities, hobbies, or sporting activities[15,17,35]

For reference, an average menstrual cycle in children and adolescents usually involves:

- Bleeding lasting 2-7 days[2,5,8,16,19]
- Blood loss of 30-40 mL or 2 tablespoons[16,17,19]
- Use of 10-15 standard sanitary products per cycle, or 3-6 products per day[2,8,14,16,17,19]
- Cycles ranging between 21 and 34 days; in the first 1 to 3 years, cycles may vary from 21-45 days [2,5,8,14,17,19]

ASSESSMENT

ALERT– any of the following are indicative of significant menorrhagia:

Haemodynamically unstable

Soaking through a pad or tampon every 1-2 hours

Duration of bleeding >7-10 days

History

- Age of menarche
- Average cycle length and cycle regularity
- Last menstrual period
- Duration and heaviness of menstrual blood flow, can be quantified by
    - How often sanitary products are changed due to being saturated
    - Type of sanitary products used (e.g., pad, tampon, period underwear) and level of absorbency (e.g. light, super, maxi products)
    - Use of multiple sanitary products at once to safeguard against overflow (e.g., period underwear and pad or tampon; pad and tampon)
- Associated pain and timing of pain e.g., pre-menstrual, during menstruation, during ovulation
- Analgesia requirements including types of analgesia used and effectiveness of analgesia
- Impact on daily life (e.g., missed school, social or sporting activities, mood disturbance)
    - If there is an impact on daily life determine the cause (e.g., is it due to mood disturbance, pain, HMB)
    - The Period ImPact and Pain Assessment (PIPPA) tool may be useful to assess impact on daily life[36]
- History suggestive of iron deficiency and iron deficiency anaemia e.g., fatigue, light headedness, decreased athletic performance, reduced cognitive performance, sleep disturbance, restless legs
- History suggestive of endocrine disorder e.g., weight gain, galactorrhoea, hirsutism
- History suggestive of underlying bleeding disorder e.g., excessive bruising or bleeding from minor injuries or procedures, recurrent epistaxis, gum bleeding, prolonged bleeding after dental procedures
- Family history of endocrine (e.g., thyroid disorders), gynaecological (e.g., endometriosis, PCOS), or haematological disorders (e.g., von Willebrand disease, haemophilia, platelet function disorders)
- Sexual history
    - This can be a difficult history of obtain and should be done without parents of caregivers present
    - Use of the 5 "Ps" can assist with addressing key elements of the sexual history[37]
- Medical, surgical and mental health history
    - The HEEADSSS assessment tool may be beneficial in building rapport and identifying risk and protective factors

- Current medications including prescribed medications and use of over-the-counter medications and supplements

When taking a history, check to see if a period tracker is used by the patient or their parent/guardian as this may assist in obtaining a more accurate history of some of the above areas (e.g., cycle length, regularity, last period, associated symptoms).

Be aware that cultural practices may influence patient and family perceptions and acceptance of menorrhagia. If able, the offer of interpreters, gender concordant clinician and trusted community members may ease this process.

Examination

The priority of initial examination is a rapid assessment of haemodynamic stability followed by any necessary resuscitation. This should be followed by more focussed examination looking for:

- Relative hypovolaemia as indicated by postural tachycardia (increase >20bpm), postural hypotension (decrease >20mmHg), increased respiratory rate on minimal exertion
- Pallor
- Evidence of bruising
- Weight gain, acne, hirsutism
- Abdominal examination for any mass or pain/tenderness

Please note it is **not expected** that any vaginal examination is performed, except in rare circumstances such as concern for cervical shock or if specifically directed to do so by Gynaecology. If required, this should be completed with a chaperone and after gaining consent.

Consider seeking senior emergency or paediatric advice as per local protocols for child with heavy menstrual bleeding for further management and pain relief.

Seek senior emergency, paediatric or gynaecology advice as per local protocols for a child with significant heavy menstrual bleeding.

Contact gynaecologist, paediatric critical care specialist and haematologist (onsite or via RSQ) for a child with life-threatening heavy menstrual bleeding.

INVESTIGATIONS

Investigations for the management of heavy menstrual bleeding in children and adolescents	
Investigation type	**Utility**
Urinary bHCG	Screening test for pregnancy. History can conceal this fact even if asked without the presence of parents. Ensure that the patient is informed that this test is performed as a routine screening test
Serum bHCG	If urine bHCG positive or unavailable
FBC	Evaluate for anaemia, signs of iron deficiency anaemia and thrombocytopaenia
Group and Hold	If haemodynamically unstable or suspect that a blood transfusion may be required (note that this is rarely required in haemodynamically stable patients)
Iron studies	In the presence of signs or symptoms of iron deficiency or iron deficiency anaemia or FBC suggestive of iron deficiency
TSH	Signs or symptoms of thyroid disease; known personal or family history of thyroid disease
Coagulation studies	History suggestive of bleeding disorder or family history of bleeding disorder, previously diagnosed HMB and failed first line therapy
Factor 8 (FVIII), Von Willebrand screen (VWS), platelet function analysis	History suggestive of bleeding disorder or family history of bleeding disorder. These tests should be directed by the on-call paediatric haematologist, please consult prior to ordering – FVIII and VWF screen are acute phase proteins and if the testing is done during active heavy bleeding, there may be false negatives.
Transabdominal US	Not routinely required. If bHCG is positive, exclude ectopic, confirm gestation. In patients with moderate-severe pain, evaluate for causes of pain. In non-pregnant patients, outpatient imaging may be appropriate, if unsure, seek advice from gynaecology
Products of conception	If products of conception are found on examination

MANAGEMENT

Although rare, some patients may present with haemodynamic compromise secondary to HMB and require prompt resuscitation.

Further information on immediate and ongoing management of HMB can be found in the Queensland Clinical Guideline menstrual management in children and adolescents.

Management of the haemodynamically unstable patient

- Immediately move to a monitored resuscitation area
- Urgent gynaecology review or phone consult if not available to review in person
- Ensure large bore access x2 (ideally 18G)
- Administer tranexamic acid 15 mg/kg IV (maximum 1 g) loading dose over 10 minutes, consider ongoing infusion of 15mg/kg (maximum 1g) over 8 hours
- If bleeding heavily (i.e., soaking through sanitary products <1houly, passing large clots), speculum examination to identify cervical shock may be indicated. If clots are identified on speculum examination, they should be removed with Magill's forceps (or similar). Ensure consent is gained, if possible, prior to examination and that a chaperone is present throughout
- Seek and treat alternative causes of shock (e.g., ruptured ectopic pregnancy)
- Fluid bolus of 10ml/kg 0.9% sodium chloride (normal saline)
    - If ongoing HMB and shock, treat for haemorrhagic shock with blood product resuscitation not repeated boluses of sodium chloride 0.9%
    - Follow local guidelines for blood product replacement
    - Consider TEG® or ROTEM® guided transfusion in facilities where this is available

Indications for blood product transfusion in stable patients

For children and adolescent patients who are not actively haemorrhaging, the National Blood Authority recommends a restrictive transfusion strategy.[27] The decision to prescribe a blood transfusion should not be based solely on a haemoglobin (Hb). The patient's symptoms, clinical signs and background medical history (e.g., cardiac or respiratory disease) should all be considered.

As a general guideline:

- Patients with Hb <70g/L often require a packed red blood cell transfusion, although, this is **not required** in stable patients without significant symptoms where bleeding has been controlled or where other specific therapy is available[27]
- Patients with Hb 70-90g/L may require a packed red blood cell transfusion if they have significant clinical signs and symptoms and/or significant underlying disease such as cardiac or respiratory disease[27]
- Patients with Hb >90g/L usually do not need transfusion and, transfusion may be inappropriate[27]

Other blood products or factor replacement may be indicated in patients with suspected or known underlying bleeding disorder. These patients should be discussed with the on-call paediatric haematologist.

Management of the haemodynamically stable patient

In most cases, patients will be suitable for discharge home with oral medication after discussion with gynaeocology. The medical management for HMB targets:

- Blood flow reduction
- Analgesia
- Hormonal regulation of the menstrual cycle
- Iron supplementation to prevent or treat iron deficiency and iron deficiency anaemia

Aim: reducing blood flow and providing analgesia

Non-steroidal anti-inflammatory drugs (NSAIDs) can reduce menstrual blood loss by 20-50% and be used in conjunction with other agents such as tranexamic acid or hormonal therapy.[20] Additionally, NSAIDs are useful in the treatment of dysmenorrhoea providing adequate pain relief in 50 to 70% of women. [20] It is recommended that NSAIDs are commenced just before or at the onset of bleeding and continued for 3-5 days.[20] Presently, there is minimal evidence for the use of one NSAID over another.[21,22,33] In patients with a known or suspected bleeding disorder, repeated use of NSAIDs should be avoided due to interference with platelet function.[23]

Non-Steroidal Anti-inflammatories (NSAIDs)	
Drug name	Ibuprofen 15 mg/kg (maximum 400 mg) orally three times daily
Common side effects (AMH)	Nausea Diarrhoea Headaches Dizziness Dyspepsia GI ulceration or bleeding Salt and fluid retention Hypertension Caution in renal patients

* Naproxen (5 mg/kg maximum 500 mg twice dailyor mefenamic acid (<50 kg 250 mg three times daily, >50kg 500mg three times daily) are alternatives that can be sourced in the community.

Aim: reducing blood flow and duration of menses

Tranexamic acid can reduce menstrual blood loss by 35-60% and may be used in conjunction with other agents such as NSAIDs and hormonal therapy.[20] It is recommended that tranexamic acid is commenced at the onset of bleeding and continued for 3 to 5 days.[20]

Drug name	Tranexamic Acid 15 mg/kg (maximum 1 g) every 6-8 hours orally Note 15mg/kg maximum 1000mg (1g) IV now follow by an infusion of 15mg/kg (maximum 1000 mg) (1g) over 8 hours can be given in severe acute bleeding
Common side effects	Nausea Vomiting Diarrhoea

Aim: hormonal regulation of menstrual cycle

Progesterone only pills such as norethisterone or medroxyprogesterone acetate can be used to treat acute heavy menstrual bleeding, reducing blood loss by 30 to 90%.[20] As withdrawal bleeding can occur when ceased, it is recommended that patients are discussed with gynaecology to determine an appropriate weaning regime e.g., weaning after 10 days or continue until seen in an outpatient setting. Combined oral contraceptive pills (COCP) reduce blood loss by 40-60%.[20] Once acute bleeding is controlled, COCP can be weaned to 1 pill daily and used continuously to avoid bleeding or with 7 days of placebo pills for predictable monthly bleeding.[20] In addition to controlling bleeding, COCP improves period pain and can be used in patients requiring contraception.[20] Avoid using COCP in patients not requiring contraception.

Progesterone-only pill	
Drug name	Norethisterone 5-10mg orally three times daily until bleeding has ceased then reduce to 5-10 mg orally daily or Medroxyprogesterone acetate 10-20mg orally three times daily until bleeding has stopped then reduce to 10-20mg orally daily, continue for 10 days then wean
Common side effects	Menstrual irregularity Prolonged bleeding Spotting Amenorrhoea Breast tenderness Depression Acne

Combined oral contraceptive pill	
Drug name	Combined oral contraceptive pill e.g., Ethinyloestradiol 30mcg + Levonorgestrel 150mcg Start in the active tablets (ignore the sugar pills) One orally daily
Side effects	Breakthrough bleeding Amenorrhoea Nausea

	Vomiting Breast enlargement and tenderness Headache Moods changes Fluid retention Cholasma Acne Thrush

Aim: Iron supplementation

Iron deficiency (ID) is the most common micronutrient deficiency worldwide.[4,18,24] The World Health Organisation (WHO) estimates ID affects more than 20% of women of reproductive age.[4] Patients experiencing HMB are at increased risk of ID and iron deficiency anaemia (IDA) due to chronic menstrual blood loss, increased iron demand during periods of rapid growth, and limited dietary intake.[4,15,18,25,35]

When assessing patients with HMB, it is vital that they are also assessed for signs and symptoms of ID and commenced on appropriate iron replacement. Iron supplementation can significantly improve symptomology (e.g., improved learning, memory, exercise tolerance) and therefore improve the quality of life for those with ID or IDA.[25,35] In most patients, oral iron supplementation is suitable first line therapy.[27,28] The recommended dose of iron for both ID and IDA is 3-6mg/kg/day of elemental iron.[27,28] As there are multiple iron formulations available with variable amounts of elemental iron, it is important that patients are using a formulation that contains sufficient elemental iron to meet requirements.[28] The iron content in over-the-counter multivitamins is low and insufficient to treat ID and IDA and should not be used.[27]

Issues with oral iron supplementation include poor compliance, gastrointestinal side effects, and poor absorption.[28,35] Absorption of iron supplements is improved by vitamin C. This can be achieved by using a dual preparation of elemental iron and vitamin C or by administering supplements with a source of vitamin C (e.g., orange juice), in addition to absorption there is the added benefit of reducing the number of medications needed to be administered.[27,28,29] As absorption is decreased by food, iron supplements should be taken at least 1 hour before or 2 hours after eating. [27, 28] There is evidence that alternate day dosing can assist with improved absorption while also decreasing gastrointestinal side effects.[24,27,30] However, if gastrointestinal side effects are prohibiting use, iron supplementation can be given with food.[28]

As it takes approximately 3-6 months for iron stores to be replenished, response to therapy should be checked after at least 3 months of treatment.[27,28] Once iron stores are replenished, it is recommended that iron supplementation continue to prevent recurrence of ID or IDA.

Iron Replacement	
Drug name	Oral iron supplementation for treatment of iron deficiency and iron deficiency anaemia: 3-6mg/kg/day of elemental iron (maximum 210mg per day) There are multiple formulations of iron supplements, examples include: (Note that these are non LAM but can be sourced in community)

	Ferro-Grad modified release tablet (105 mg elemental iron) Ferrograd–C (105mg elemental iron) + ascorbic acid (500mg) modified release tablet Maltofer (100mg elemental iron) Maltofer syrup (10mg/ml of elemental iron)
Side effects	Black stools Constipation Diarrhoea Abdominal pain Nausea Bloating
Monitoring	Iron levels 3 – 6 months after commencing treatment

For some patients oral therapy alone will be insufficient resulting the need for intravenous (IV) iron supplementation. Indications for IV therapy include:

- Continued iron deficiency despite adequate oral therapy[24, 27, 29]
- Intolerance to oral therapy e.g., side effects poorly tolerated[24, 27,28, 29]
- Major issues with compliance[27]
- Comorbidities affecting absorption e.g., gastrointestinal disease[24, 27,28, 29]
- Patients receiving erythropoietin stimulating agents[24, 27, 29]
- Continued blood loss that exceeds iron absorptive capacity[27, 29]
- Rapid iron replacement required e.g., to prevent physiological decompensation, preoperatively for non-deferrable surgery[24, 27, 29]
- Genetic disorders of iron transport[27]

Within Queensland Children's Hospital (QCH), patients with ID or IDA secondary to HMB requiring iron infusion should be discussed with and referred to the Paediatric Adolescent Gynaecology (PAG) Service. This is a statewide service based at the Royal Brisbane and Women's Hospital (RBWH) with clinics run at both RBWH (patients 14 years and over) and QCH (patients under 14 years). Patients deemed suitable for outpatient iron infusion are to be referred after discussion with the PAG service, from here they will be triaged and brought back to the appropriate clinic. For patients requiring outpatient iron infusion, it is essential that this is clearly flagged within the written referral to ensure that the patient is booked into the appropriate clinic.

If after discussion with the PAG service it is determined that a patient requires urgent inpatient iron infusion, they are to be referred to paediatric general surgery for admission on behalf of PAG. Please refer to the Intravenous Iron Infusion Medication Guideline. Outside of QCH, please refer to local guidelines for the most appropriate referral service.

Aim: Haemostasis in setting of a known bleeding disorder

If the patient has a known bleeding disorder, please refer to a patient's individualised management plan. It is recommended that patients with known bleeding disorders are discussed with the on call paediatric haematologist.

When to escalate care

Follow your local facility escalation protocols for patients of concern. Transfer is recommended if the patient requires care beyond the level of comfort of the treating hospital. Clinicians can contact the services outlined below to escalate the care of a paediatric patient.

Reason for Contact	Who to contact
Advice	Options: • Onsite/local paediatric service • PAG via switch • Queensland Children's Hospital experts via Children's Advice and Transport Coordination Hub (CATCH) on 13 CATCH (13 22 82) (24-hour service) • Local and regional paediatric videoconference support via Retrieval Services Queensland (RSQ) Telehealth (access via QH intranet) on 1300 799 127 (24-hour service)
Paediatric Critical care advice and assistance	Onsite or via Retrieval Services Queensland (RSQ). If no onsite paediatric critical care service contact RSQ on **1300 799 127**: • for access to paediatric critical care telephone advice • to coordinate the retrieval of a critically unwell child RSQ (access via QH intranet) Notify early of child potentially requiring transfer. Consider early involvement of local paediatric/critical care service. In the event of retrieval, inform your local paediatric service

DISPOSITION

Most patients can be discharged home on oral medication. Admission to hospital may be required in cases of haemodynamic instability, bleeding not responding to treatment in the emergency department, extreme anaemia or iron deficiency requiring urgent treatment (e.g., blood product transfusion or iron infusion), or ongoing high analgesia requirements.

When to consider discharge

Consider discharge in patients who meet the following criteria:

- Stable vital signs
- Normal postural observations (use clinical judgment if minor abnormalities)
- Bleeding controlled with an ongoing outpatient management plan that is understood and able to be followed by the patient and caregivers
- Pain controlled by oral analgesia with a safe and reasonable plan for ongoing analgesia in the community
- A clear follow up plan including a discharge summary/letter, see follow up below for further information

Follow-up

- General practitioner (GP), generally suitable for patients with mild to moderate bleeding who are commencing first line therapy in the absence of complex medical or social factors. Some GPs have the capability to provide iron infusions but this would depend on the age of the child and the practice they are being referred to
- Gynaecology outpatients, recommended for patients that have failed first line therapy or not been able to access adequate medical management, those with a history or examination consistent with underlying gynaecological pathology and those with a complex medical or social history. At QCH, patients should be discussed with and referred to the PAG service. All other catchments, discuss with the local gynaecology service for most appropriate referral service
- Haematology outpatients, patients with a known or suspected bleeding disorder after discussion with and referral to haematology

When to consider admission

- Haemodynamic instability at any point during a patient's emergency presentation
- Postural instability
- Ongoing severe bleeding (soaking a pad every hour)
- Requiring factor, blood transfusion or iron infusion
- Complex medical history or social concerns

Within QCH, patients should be discussed with the PAG service for guidance on treatment. If it is deemed that admission is required, they are to be referred to paediatric general surgery for admission on behalf of

PAG who will continue to consult. Patients with a known or suspected bleeding disorder should also be discussed with haematology.

Outside of QCH, patients should be discussed with the appropriate local gynaecology services for further management advice and or admission including discharge medication and follow up planning. Further information on management of HMB can be found within the Queensland Clinical Guideline menstrual management in children and adolescents.

It is recommended that patients with a known or suspected bleeding disorders are discussed with the on-call paediatric haematologist.

Facilities without a Short Stay Treatment Area (STTA)

In the absence of an appropriate STTA, admission to an appropriate bedspace as per local guidelines for ongoing monitoring and treatment.

Facilities with a Short Stay Treatment Area (STTA)

It may be appropriate to admit to the ED STTA for short term observation (e.g., to monitor bleeding) and limited treatment (e.g., determine analgesia requirements, commence oral therapies) following consultation with gynaecology. Refer to local policy regarding suitability. Patients referred to STTA must be haemodynamically stable.

When to consider admission to an inpatient ward from (STTA)

Patients with ongoing significant bleeding not manageable at home, ongoing severe pain despite adequate oral analgesia, or other concerns preventing safe discharge, should be admitted to an inpatient ward or transferred to an alternative facility as per local policy.

SUPPORTING DOCUMENTS

Standards:

- National Safety and Quality Health Service (NSQHS) Standards

Supporting documents:

- Abdominal pain – Emergency Management in Children
- Queensland Clinical Guidelines: Menstrual management in children and adolescents
- Intravenous iron infusion medication guideline

Factsheet:

- How to meet my child's iron needs

CONSULTATION

Key stakeholders who reviewed this version:

• Paediatric and Adolescent Gynaecology service at RBWH • Paediatric General Surgery at QCH • Paediatric Haematology service at QCH	• Pharmacy at QCH • Emergency Department at QCH • Medications Advisory Committee 12/12/25

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GUIDELINE REVISION AND APPROVAL HISTORY

Version No.	Modified by	Amendments authorised by	Approved by	Comments
1.0 06/02/2026	ED Guidelines SMO, Critical Care	Deputy Director, Emergency Department Divisional Director, Critical Care	Executive Director Medical Services Chief Operating Officer	New document

Key words	Menorrhagia, menstrual, bleeding, period, HMB, menses, blood, 00754
Accreditation references	The National Safety and Quality Health Service (NSQHS) Standards (1-8): • Standard 1 Clinical Governance • Standard 4 Medication Safety • Standard 8 Recognising and Responding to Acute Deterioration

APPENDIX 1: HAEMORRHAGIC SHOCK FLOWCHART