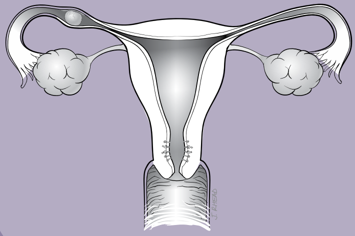

MANAGEMENT OF

Abnormal Uterine Bleeding

2017 Update

This care process model (CPM) was developed by Intermountain Healthcare's Gynecology Development Team under the guidance of the Women and Newborns Clinical Program. It recommends an evidence-based approach for assessing and treating chronic **abnormal uterine bleeding (AUB)** in non-pregnant women of reproductive age. AUB is defined as menstrual flow outside of normal volume, duration, regularity, or frequency. Normal volume is < 80 ml per cycle, duration is ≤ 7 days of active bleeding, and regularity is 21 – 35 days between cycles.

This CPM will not address postmenopausal bleeding or the acute management of severe bleeding.

WHY FOCUS ON ABNORMAL UTERINE BLEEDING?

- **Morbidity and prevalence.** One-third of outpatient visits to the gynecologist are for AUB.[LIU] The prevalence of AUB in reproductive-aged women is 10 – 30 %.
- **Cost.** The estimated annual direct and indirect economic costs of AUB are $1 billion and $12 billion, respectively, not accounting for intangible costs and loss of productivity.[LIU]
- **Complexity.** AUB has many possible causes and a diverse array of treatments, ranging from medical therapy to surgery. A standardized terminology, describing the causes of AUB, will help to standardize approaches to treatment.
- **A systematic approach to diagnosis and treatment is needed** to ensure that treatment — including surgical approaches — is appropriate for the condition.[COR, MAR]

Program Goals and Measurements

- Reduce number of hysterectomies performed for AUB by maximizing less-invasive therapies
- Increase number of patients offered and / or attempted therapy with LNG-IUS
- Increase compliance with hysterectomy criteria set
- Increase compliance with EA criteria set
- Reduce number of EAs performed that have high likelihood of failure
- Eliminate EAs performed without prior EMB
- Compliance with the ***AUB Hysterectomy Checklist***

Throughout this CPM, this icon indicates an Intermountain measure

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ACRONYM GLOSSARY

CBC	complete blood count
CVA	cerebrovascular accident
D&C	dilation & curettage
DDAVP	desmopressin
EA	endometrial ablation
EMB	endometrial biopsy
HMB	heavy menstrual bleeding
HSG	hysterosalpingography
IMB	intermenstrual bleeding
IUD	intrauterine device
LNG-IUS	levonorgestrel intrauterine system
MRI	magnetic resonance imaging
MI	myocardial infarction
PCOS	polycystic ovary syndrome
PCR	polymerase chain reaction
PT	prothrombin time
PTT	partial thromboplastin time
SIS	saline-infused sonohysterography
TSH	thyroid stimulating hormone
UAE	uterine artery embolization
US	ultrasound
VTE	venous thromboembolism

Intermountain Healthcare

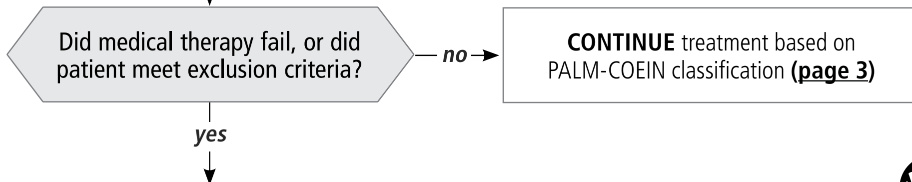
ALGORITHM: CLASSIFICATION AND MANAGEMENT

Patient with AUB (see page 1)

EVALUATE cause of AUB

- ☐ **ASSESS medical history.**
  - DISCUSS menstrual history including timing and quantity of bleeding
  - DETERMINE ovulatory status
  - DISCUSS family or personal history of bleeding disorders
  - ASSESS risk factors for uterine cancer
  - DISCUSS medications that impact hemostasis, contraception, and associated symptoms
- ☐ **PERFORM physical exam.**
  - EVALUATE size and contour of uterus
  - EVALUATE mobility
  - VERIFY source of bleeding as uterine
  - EVALUATE for physical signs of PCOS
- ☐ **PERFORM / ORDER pregnancy (urine), CBC, and Pap tests as indicated.** CONSIDER additional testing based on history and exam, such as chlamydia PCR, TSH, prolactin, PT, PTT, and others as indicated. **(Note: labs not indicated include FSH, LH, estrogens, and progesterone.)**
- ☐ **CONSIDER these procedures as indicated:**
  - US based on bleeding severity, age, symptoms, and exam
  - Office hysteroscopy or saline infusion sonohysterography, which may be indicated if intracavitary pathology suspected on US or history of intermenstrual bleeding
  - EMB, which is indicated for all women ≥ 45 with AUB or for women < 45 with history of unopposed estrogen (obesity or PCOS), failed medical therapy, or persistent AUB

CLASSIFY and TREAT AUB using PALM-COEIN system (see page 3)



yes

EVALUATE criteria for endometrial ablation (EA) or hysterectomy for AUB

Criteria for endometrial ablation (ANY below?)[ACO1]

- ☐ Normal endometrial sampling without hyperplasia / atypia within 3 months or at time of surgery
- ☐ Finished with childbearing
- ☐ No submucous fibroids or polyps ≥ 2 cm (CONSIDER hysteroscopic resection prior to EA)
- ☐ Failure of LNG-IUS or other medical therapy or intolerance to medical therapy
- ☐ Age ≥ 40 (if age < 40, CONSIDER placement of LNG-IUS at time of EA)[LON, PAP]
- ☐ Plan for contraception (CONSIDER placement of LNG-IUS at time of ablation to provide contraception and increase success rate of ablation)[PAP]

Note:

Factors with a high risk of EA failure and subsequent hysterectomy:[LON]

- Age < 40
- Sound > 10 cm
- Cavity width > 6 cm
- Uterus > 12-week size
- Submucous fibroids > 2 cm
- Dysmenorrhea

Criteria for hysterectomy

- ☐ Medical therapy with LNG-IUS for a minimum of 3 months within 2 years prior to hysterectomy unless contraindicated or not tolerated

OR

- ☐ Medical therapy with oral contraceptive pills / patch / ring, progestins, or other hormonal control or tranexamic acid (Lysteda) for a minimum of 3 months within 2 years prior to hysterectomy unless contraindicated or not tolerated

OR

- ☐ EA with / without placement of LNG-IUS unless contraindicated (prefer failure of medical therapies prior to proceeding to EA; see criteria for EA)

AND

- ☐ Persistent excessive bleeding during trial of therapy that results in persistent anemia or dramatically altered quality of life

Notes:

- **Patients should attempt more than a single therapy prior to hysterectomy, including control of bleeding with LNG-IUS, unless contraindicated.**[HEL]
- Exclusions from criteria include uterus > 12-week size, or estimated size > 250 g; submucous fibroids ≥ 2 cm; and other concurrent indications for hysterectomy including malignancy, bulky fibroids, and symptomatic uterovaginal prolapse.
- A questionnaire to document alternate therapies attempted will be required at the time of surgery scheduling in iCentra (see online questionnaire here).

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TABLE 1. PALM-COEIN Standardized Classification System for AUB* [ACO1, ACO2, MUN]			
Name (Classification)	**Symptoms or Characteristics**	**Diagnostic Approach**	**Treatment Approach**
PALM - Structural Causes of AUB			
Polyp (AUB-P)	Mild to moderate IMB or irregular spotting, which may not respond to hormonal therapy	Pelvic US with irregular or thickened stripe; confirmed by SIS, HSG, diagnostic hysteroscopy	PERFORM hysteroscopic resection. (**Note: blind polypectomy with D&C is not an acceptable treatment.**)
Adenomyosis (AUB-A)	Dysmenorrhea, potential HMB	Pelvic US, MRI, clinical suspicion on exam with "boggy" and / or tender uterus	INITIATE combined hormonal or progestin therapy including LNG-IUS.
Leiomyoma (AUB-L) Submucous (AUB-Lsm)	HMB, with menses that may last > 7 days	Pelvic US, MRI, possibly diagnostic hysteroscopy, SIS, or HSG	TREAT with Lupron, followed by hormonal or LNG-IUS therapy. **OR** PERFORM hysteroscopic resection followed by hormonal, LNG-IUS, or EA therapy with or without LNG-IUS. **OR** PERFORM hysterectomy for large submucous fibroids. (**Note:** Hormonal treatments, including LNG-IUS, are often ineffective unless fibroid is resected.)
Transmural, subserous (AUB-Lo)	Unlikely to contribute to AUB	Pelvic US, MRI, exam	No indication for therapy as unlikely to contribute to AUB. CONSIDER other therapies — UAE, Lupron, or hysterectomy — based on bulky symptoms.
Malignancy or hyperplasia (AUB-M)	HMB or IMB, often suspected with co-existing obesity, type 2 diabetes mellitus, or hypertension co-morbidities	EMB, hysteroscopy with endometrial sampling	**No atypia** – TREAT with LNG-IUS or oral progestins; REPEAT EMB as indicated. **Atypia** (endometrial intraepithelial neoplasia) or malignancy and no desire for fertility – CONSULT gynecologic oncology. (**Note:** If atypia or grade 1 endometrial malignancy present and patient desires fertility, CONSULT gynecologic oncology or reproductive endocrinology and infertility specialist prior to treatment.)
COEIN - Nonstructural Causes of AUB			
Coagulopathy (AUB-C)	HMB or IMB in presence of anticoagulant therapy or other coagulopathy	History and exam, possible EMB	MAXIMIZE medical therapy. • If anticoagulant therapy necessary, PAIR with factor infusions / DDAVP / other as indicated. • LNG-IUS is often very effective. • Tranexamic acid may be effective and paired with other medical therapy.
Ovulatory (AUB-O) [ACO3]	Irregular bleeding that is heavy, may have IMB, often accompanied by PCOS and/or obesity	History and exam, possible EMB, imaging	MAXIMIZE medical therapy. LNG-IUS is very effective.
Endometrial (AUB-E)	Regular HMB, ovulatory cycles, diagnosis of exclusion	History and exam, possible EMB, imaging	MAXIMIZE medical therapy. LNG-IUS is very effective CONSIDER hysterectomy for failed medical therapy with severe and / or persistent bleeding or anemia.
Iatrogenic (AUB-I)	Medication-induced, IUD	History and exam, possible imaging, EMB	CHANGE medications; REMOVE IUD; and PROVIDE other indicated therapy.
Not otherwise specified (AUB-N)	Chronic endometriosis, arteriovenous malformation, myometrial hypertrophy	History and exam, imaging	PROVIDE indicated therapy.

* The PALM-COEIN standardized classification system for AUB was introduced in 2011 by the International Federation of Gynecology and Obstetrics, and its use is supported by the American College of Obstetricians and Gynecologists for describing AUB. This system classifies uterine bleeding abnormalities by bleeding pattern (i.e., HMB or IMB) and by etiology. This classification system will be used to define the workup and appropriate treatments for AUB. Note that this classification is different from the nomenclature used by ICD-10 codes, which are assigned for billing purposes.[MUN]

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TABLE 2. Medications used in the treatment of AUB [ACO4]

Medication name — generic (Brand)	Dosage and Frequency	Tier[1] / Cost[2]	Notes
Progestins			
levonorgestrel IUD (Mirena, Liletta, Kyleena, Skyla)	Place every 3–5 years.	N/A[3]	Treatment of choice for long-term control of bleeding, cost-effective therapy, and provides contraception if needed.
medroxyprogesterone acetate or norethindrone tablets (Provera, Aygestin)	Use daily or cyclic during luteal phase of cycle.	Tier 1–$	Medroxyprogesterone tablets have a quantity limit of 30 per fill.
medroxyprogesterone injection (Depo-Provera)	150 mg intramuscularly every 3 months.	Tier 1–$	Potential bone loss with long-term use.
megestrol acetate (Megace)	20–80 mg orally twice a day.	Tier 1–$ to $$	Risk of VTE.
Combined estrogen-progestin			
oral contraceptive pills	One tablet daily; option for continuous cycle (may use estrogen dose and type of progestin best tolerated by patient).	Most are Tier 1 or Tier 2–$	Potential for VTE, hypertension, MI, CVA. See online formulary tool to view specific products.
ethinyl estradiol and etonogestrel (NuvaRing)	One ring for 3 weeks; option for continuous cycle.	Tier 2–$	Potential for VTE, hypertension, MI, CVA.
ethinyl estradiol and norelgestromin (Xulane)	0.53 mg (ethinyl estradiol); 4.86 mg (norelgestromin).	Tier 2–$	Potential for VTE, hypertension, MI, CVA.
Antifibrinolytic agent			
tranexamic acid (Lysteda)	1,300 mg (2 tablets) every 8 hours for 5 days during menses.	Tier 1–$$$	Potential for increased VTE risk.

[1] **Tier:** Tier 1 = $5 to $15 copay; Tier 2 = $30 to $45 copay; Tier 3 = $60 to $75 copay (based on typical SelectHealth 2017 benefit design; some benefit designs may differ).
[2] **Cost:** Estimated monthly cost based on usual dose. $=$1 to $25; $$=$26 to $75; $$$=$76 to $150; $$$$ = $150 to $300; $$$$$ = >$300
[3] **IUDs:** These are covered under the medical benefit and not the prescription benefit; thus, they don't have a tier.

PATIENT EDUCATION

Patient education is critical for obtaining informed consent for invasive procedures and for providing good care in general. To support this education, the following fact sheet handouts are available (in English and Spanish) on intermountain.net/clinical/wn (on the "All Women and Newborns Documents" page). They are also available to order for distribution to patients from Intermountain's iprintstore.org.

- *Hysteroscopy*
- *Endometrial Ablation*
- *Hysterectomy*

CPM DEVELOPMENT TEAM

Jeff Arrington, MD
Anne Blackett, DO
Annette Crowley, MSN, RN
Bob Fagnant, MD
Chris Hutchison, MD
David Jackson, MPH (Medical Writer)
Kari Lawrence, MD
John McCarter, MD
Jean Millar, MBA, RN
Kristi Nelson, MBA, RN
Sara Jane Pieper, MD (Chair)
Scott Rallison, MD
Scott Rees, MD
Stephen Sanders, MD

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Note: This document presents an evidence-based model of care that is appropriate for most patients. It should be adapted to meet the needs of individual patients and situations and should not replace clinical judgment. Send feedback to Sara Jane Pieper, MD, Intermountain Healthcare (gyn@imail.org).

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