Centre universitaire de santé McGill
McGill University Health Centre

Medical or Clinical Guideline MUHC

☒ Medication included ☐ No Medication included

THIS IS NOT A MEDICAL ORDER

Title:	Emergency Management of Vaginal Bleeding in the Adolescent with a Negative Pregnancy Test - Pediatrics
This guideline is attached to:	Algorithm for Emergency Department Use Vaginal Bleeding in Pregnancy Protocol (in progress)

1. PURPOSE

This is an algorithm that will assist Emergency Department physicians in managing adolescents with vaginal bleeding.

GUIDELINE APPICABLE IN THE FOLLOWING SETTING:

Emergency Department at the Montreal Children's Hospital

GUIDELINE HAS BEEN APPROVED BY: Adolescent Medicine and Pediatric Gynecology, Emergency Department, Pharmacy and Therapeutics

3. ELEMENTS OF CLINICAL ACTIVITY

Causes of dysfunctional uterine bleeding:

1) **Anovulatory Bleeding:** This is the most common cause of dysfunctional uterine bleeding (DUB) in adolescents. In this situation estrogen stimulates the production of a thick endometrium, but since ovulation does not occur, progesterone is not produced. Progesterone has two important functions: stabilizing the endometrial lining, and when its production drops suddenly at the end of the menstrual cycle, acting as a signal for coordinated sloughing of the endometrial lining. Thus, when the patient is anovulatory bleeding is erratic (metrorrhagia) and often abundant (menorrhagia).

   Anovulation is very common in teens in their first two years post-menarche, due to immaturity of the hypothalamic-pituitary-ovarian axis. In the later years, however, stress, illness, or polycystic ovary syndrome can also lead to anovulation.

2) Cervicitis, endometritis or pelvic inflammatory disease (PID)
3) Von Willebrands disease (usually bleed very heavily with every menstruation)
4) Idiopathic thrombocytopenic purpura or thrombotic thrombocytopenic purpura
5) Hypothyroidism (and less commonly hyperthyroidism)

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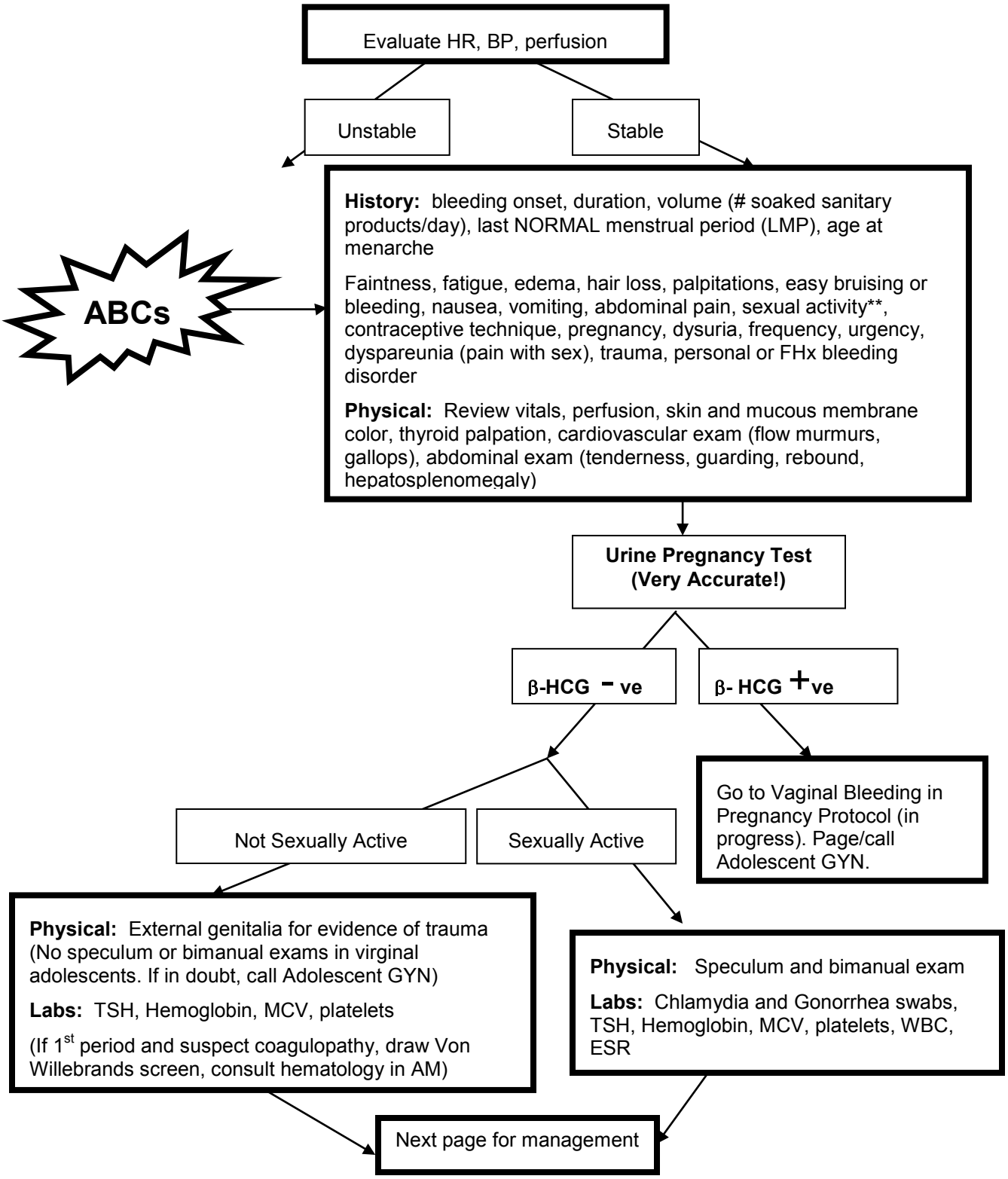
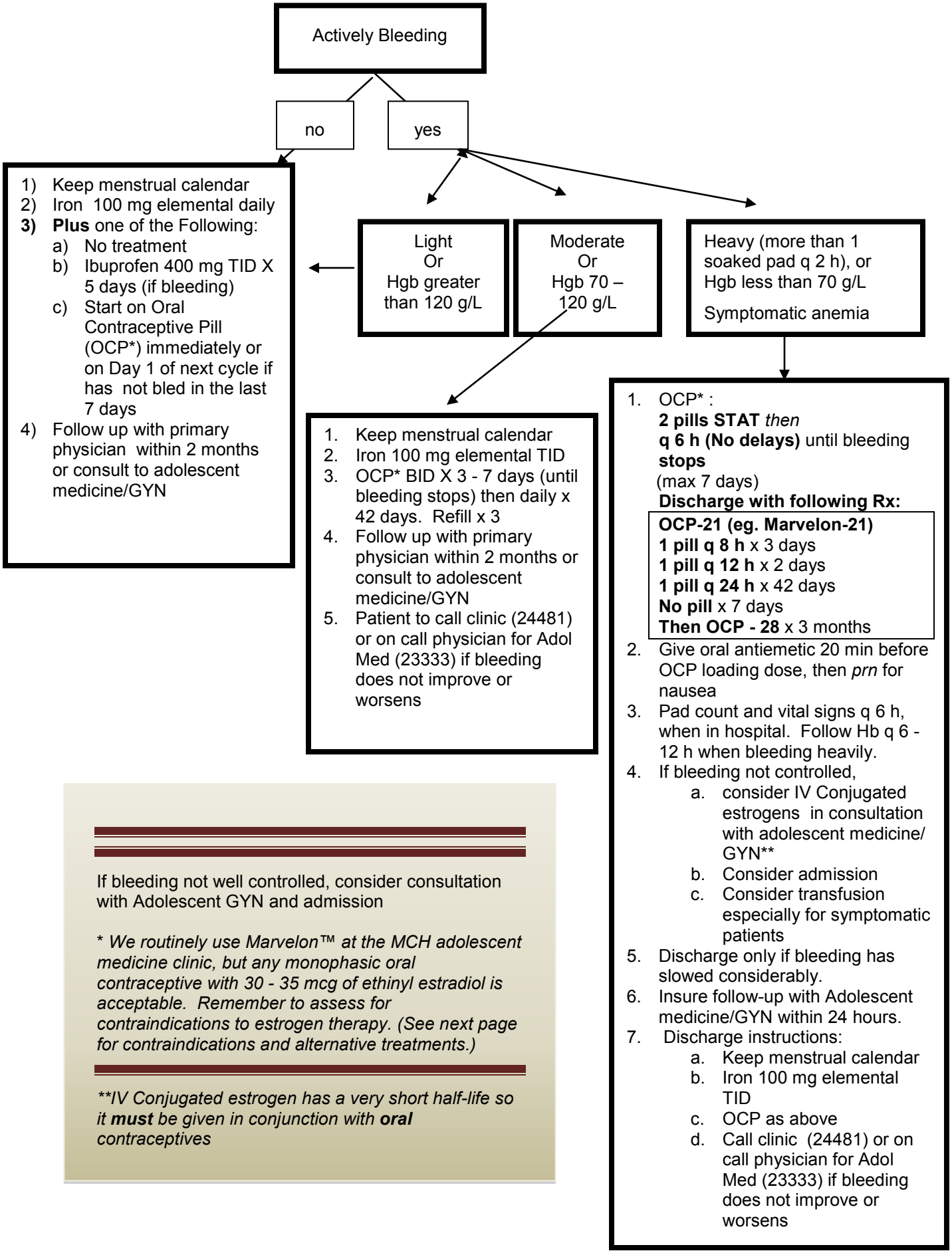
Procedure:

MANAGING VAGINAL BLEEDING IN ADOLESCENTS



** Ask patient privately (alone) in order to get an accurate answer. Explain confidentiality and its limits.



If bleeding not well controlled, consider consultation with Adolescent GYN and admission

** We routinely use Marvelon™ at the MCH adolescent medicine clinic, but any monophasic oral contraceptive with 30 - 35 mcg of ethinyl estradiol is acceptable. Remember to assess for contraindications to estrogen therapy. (See next page for contraindications and alternative treatments.)*

***IV Conjugated estrogen has a very short half-life so it **must** be given in conjunction with **oral** contraceptives*

Medications:

Ferrous Fumarate:
Dosage: 100 mg elemental iron one to three times daily for adolescents and adults
Indications: Iron replacement in patients with iron deficiency. Generally a daily dose suffices for an iron deficient patient without anemia. Replenishment of iron stores in an anemic patient can take up to 6 months of BID treatment.
Contraindications: Avoid in patients with peptic ulcer, enteritis, or ulcerative colitis.

Oral Contraceptives (OCP's):
Dosage: See previous page. OCP's with only 20 mcg of ethinyl estradiol – eg. Alesse, Minestrin – are generally not good initial choices in patients who present with bleeding because of insufficient estrogen content.
We routinely use **Marvelon™** at the MCH adolescent medicine clinic, but any monophasic oral contraceptive with 30 - 35 mcg of ethinyl estradiol is acceptable (**Cyclen, Minovral, Brevicon 1/35, Demulen, Seasonale, Seasonique**).
We generally cycle patients for a MINIMUM of 6 months on oral contraceptives if they had anovulatory bleeding. In patients who are less than 2 years post-menarche, we usually recommend that they cycle on OCP's at least until they have completed their second year post-menarche. There is NO CONTRAINDICATION to continuing on the pill for cycle control. Prolonged oral contraceptive use does not increase the incidence of infertility, does not promote weight gain, does not promote sexual activity, and does not increase cancer risk. In fact, women who use oral contraceptives for five or more years cut their ovarian cancer risk in half.
Contraindications: personal history of thrombosis or stroke; thrombophilia; migraines with neurologic manifestations (complicated migraines), active liver disease, termination of a pregnancy greater than 20 weeks less than 21 days ago, current pregnancy, current estrogen-dependent cancer (eg. breast)

Conjugated oestrogens (Intravenous):
Initiate only after consultation with GYN on-call
Dosage: 25 mg IV over 20 minutes q 4 – 6 h prn. Maximum 4 doses. Note that OCP (2 tabs initially then q 6 h) must be given simultaneously in order to get longer-term hemostatis. Once the bleeding stops, continue with the "heavy bleeding" treatment strategy.
Indications: Severe or refractory vaginal bleeding.
Contraindications: personal history of thrombosis or stroke; thrombophilia; migraines with neurologic manifestations (complicated migraines), active liver disease, termination of a pregnancy greater than 20 weeks less than 21 days ago, current pregnancy, current estrogen-dependent cancer (eg. breast)
Precautions: Estrogens may cause retinal vascular thrombosis; discontinue if migraine, loss of vision, proptosis, diplopia, or other visual disturbances occur; discontinue permanently if papilledema or retinal vascular lesions are observed on examination

Alternatives to Oral Contraceptives for the Management of Anovulatory Bleeding:
(Discuss with GYN on-call.)

Medroxyprogesterone acetate (Provera)
Dosage: 10 - 20 mg daily to TID. Base the dose on the amount of bleeding. Give an initial dose of 10 - 20 mg and repeat the dose every 2 to 4 hours until the bleeding stops (or is bleeding very lightly), to a maximum of 60 mg on Day 1. Follow this with a dose of 10 to 30 mg daily for 7 days followed by 10 mg to 20 mg daily x 14 days. Termination of the Provera leads to bleeding after 1 to 3 days. Cycle the patient by giving Provera 10 mg from the 1st to the 14thof each month.
Contraindications: severe hepatic dysfunction, progesterone dependent cancer (eg. Breast), hypersensitivity reaction to progesterone; history of or current thrombophlebitis or venous thromboembolic disorder; cerebral vascular disease; current pregnancy

Tranexamic acid (Cyklokapron)
Dosage: 1000 mg po TID for up to 5 days.
Indications: Tranexamic acid is an antifibrinolytic. Used in very resistant cases as an adjunct to conjugated estrogens IV. Use in consultation with adolescent medicine/GYN and/or hematology.
Contraindications: Hypersensitivity to tranexamic acid, active thromboembolic disease, history of thrombosis or thromboembolism, intrinsic risk of thrombosis or thromboembolism (hereditary hypercoagulability, thrombogenic arrhythmia, thrombogenic cardiac valvular disease).
Precautions: Ocular changes (color vision change, vision loss, retinal artery or vein occlusion have been reported. Any visual changes should result in immediate discontinuation of the medication and prompt evaluation by the ophthalmologist. Seizures with use – particularly intravenous use, and use in the elderly – has been reported.
Use with **caution** in patients taking **oral contraceptives**, especially in those using higher than normal dosing (i.e. more than one pill).
Use with caution in patients taking oral **tretinoin** (Accutane) as it may exacerbate procoagulant effects
Use with cautions in patients with cerebrovascular or uncorrected cardiovascular disease, with subarachnoid haemorrhage (may cause cerebral edema or infarction), with disseminated intravascular coagulation (DIC). Patients with renal impairment require dosage modification.

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4. APPROVAL PROCESS

Institutional and professional approval

Committees	Date [yyyy-mm-dd]
☒ Pharmacy and Therapeutics Pediatrics (if applicable)	2013-03-11
☐ Adult Pharmacy and Therapeutics (if applicable)	
☐ MUHC Adult Site Medication Administration Policy (MASMAP) (if applicable)	
☐ MUHC Pediatric Medication Administration Policy (PMAP) (if applicable)	
☒ Clinical Practice Review Committee (if applicable)	2012-01-08
☐ Nursing Executive Committee and Council of Nurses (NEC and CN) (if applicable)	
☐ Multidisciplinary Council (if applicable)	
☐ MUHC Central Executive Committee of Council of Physicians Dentists and Pharmacists Committee (ECPDP) (Obligatory if attached to a collective order) — Final approval Signature of Chairperson: _____	

5. REVIEW DATE

To be updated in maximum of 5 years (2018) or sooner if presence of new evidence or need for practice change.

6. REFERENCES

Adolescent Medicine/Menorrhagia/Evaluation/ BESt 088
Best Evidence Statement
http://www.cincinnatichildrens.org/svc/alpha/h/health-polic/ev-based/default.htm
Cincinnati Children's Hospital Medical Center, 2011

Gray SH, Emans SJ. *"Abnormal Vaginal Bleeding in Adolescents"*
Pediatrics in Review 2007;28;175

Lethaby A, Augood C, Duckitt K, Farquhar C. "Nonsteroidal anti-inflammatory drugs for heavy menstrual bleeding" **Cochrane Database of Systematic Reviews** 2007:4. Art. No.: CD000400. DOI: 10.1002/14651858.CD000400.pub2

Munro MG. "Abnormal Uterine Bleeding in the Reproductive Years. Part II – Medical Management." **Journal of the American Association of Gynecologic Laparoscopists.** 2000; 7(1): 17 - 32.

Aksu MF, Madazli R, Budak E, Cepni I, Benian A. High Dose Medroxyprogesterone Acetate for the Treatment of Dysfunctional Uterine Bleeding in 24 Adolescents. Australian and New Zeland Journal of Obstetrics and Gynecology.1997; 37(2): 228-231.