Future of Pediatrics

THE MENSTRUAL CYCLE: HEAVY MENSES & DYSMENORRHEA

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ABOUT ME

- Current Role:
  - Pediatric Gynecologist at Children's National
  - Director of Female Fertility Preservation and Gynecologic Research
- Education/Training:
  - Medical School: University of Massachusetts
  - Residency: The George Washington University
  - Fellowship: National Institutes of Health (NICHD)
- Clinical Interests:
  - MRKH Syndrome (Mullerian Agenesis)
  - Endometriosis
  - Fertility Preservation
  - Pre-pubertal Vulvovaginal Disorders

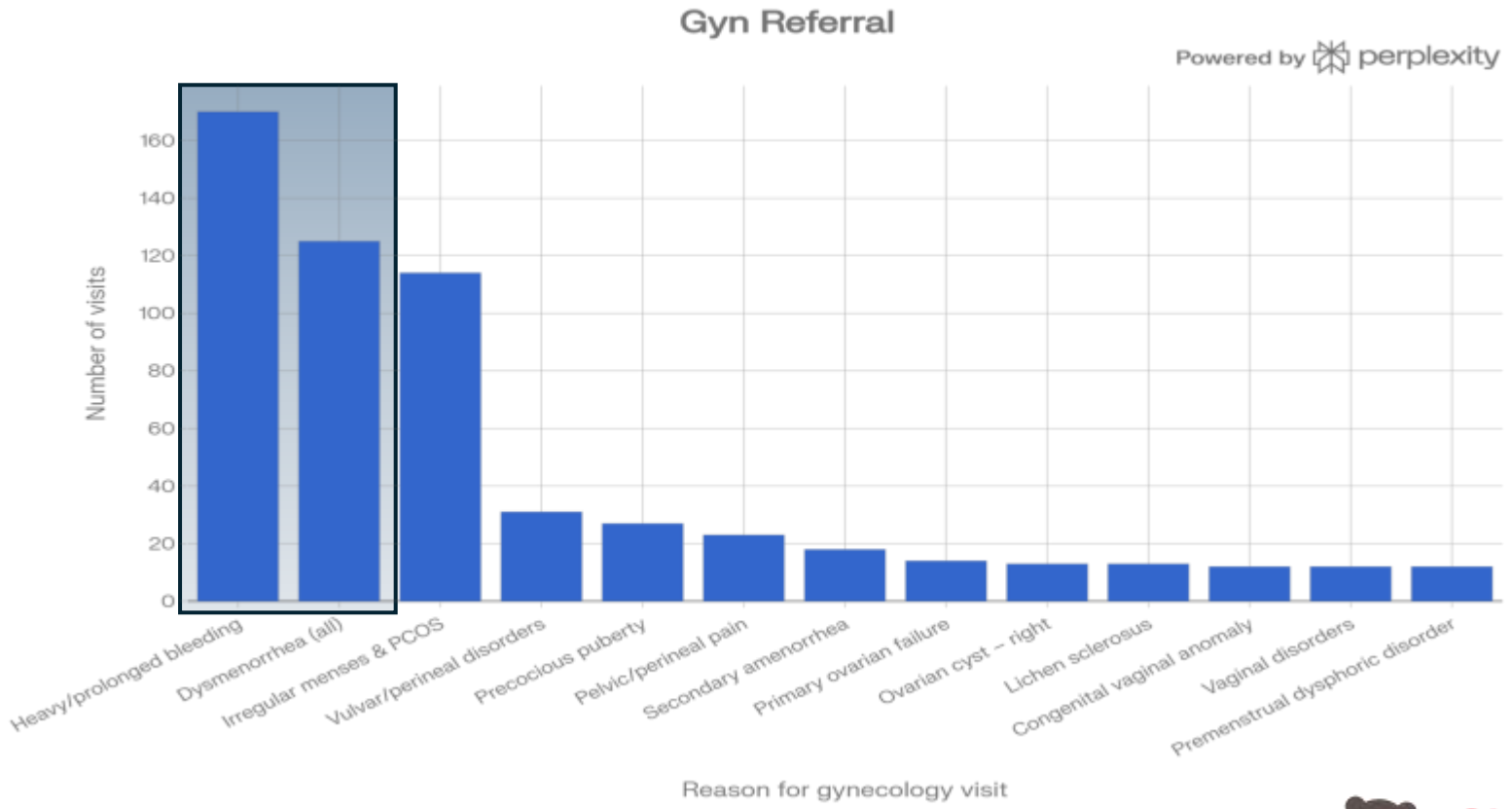
OBJECTIVES

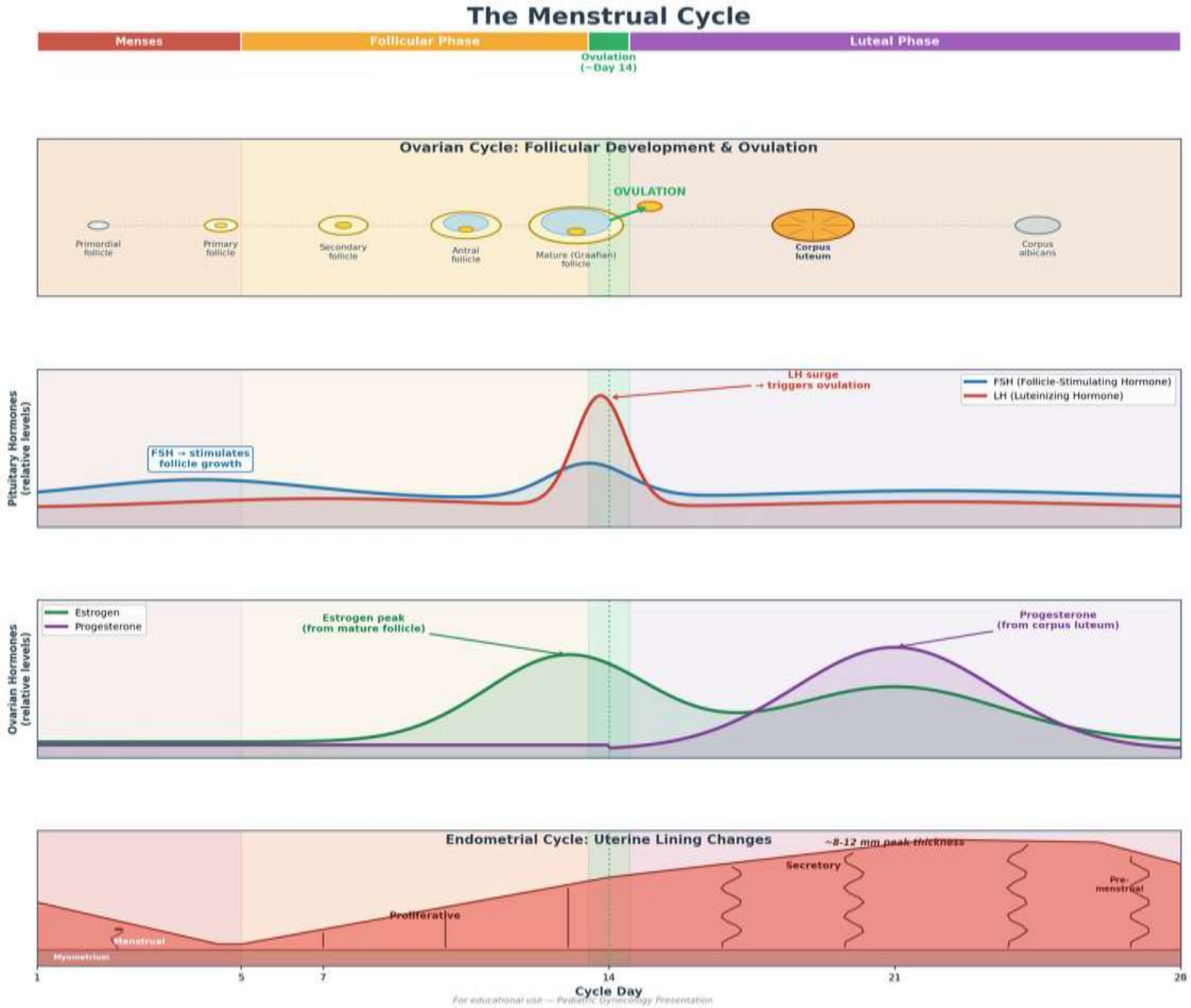
- Summarize gynecology referral prevalence (2 minutes)
- Briefly review typical menstrual cycle (4 minutes)
- Review 2 clinical cases of the most common reasons for gynecologic referrals to CNH, discuss differential, and initial workup/management (8 minutes each)
- Questions (8 minutes)

DISCLOSURES & HOUSEKEEPING

1. Financial Disclosure: I have no individual financial disclosures; however, my spouse is an equity owner and operator of a healthcare business (Ennoble Care) that is a hospice and house calls health care company operating nationally including in the DMV.
2. Utilized AI for creation of this presentation - Canva (design tool) and Perplexity (image creation + literature review) & Biorender (image design)
3. Note on language I will be using girl/female to describe individuals with female reproductive anatomy (e.g., uterus, vagina, vulva) understanding the complexities of sex and gender

REFERRAL REASONS




The Menstrual Cycle
Menses
Follicular Phase
Ovulation (~Day 14)
Luteal Phase
Ovarian Cycle: Follicular Development & Ovulation
OVULATION
Primordial follicle
Primary follicle
Secondary follicle
Antral follicle
Mature (Graafian) follicle
Corpus luteum
Corpus albicans
Pituitary Hormones (relative levels)
LH surge → triggers ovulation
FSH (Follicle-Stimulating Hormone)
LH (Luteinizing Hormone)
FSH → stimulates follicle growth
Ovarian Hormones (relative levels)
Estrogen
Progesterone
Estrogen peak (from mature follicle)
Progesterone (from corpus luteum)
Endometrial Cycle: Uterine Lining Changes
~8-12 mm peak thickness
Secretory
Pre-menstrual
Proliferative
Menstrual
Myometrium
1
5
7
14
21
28
Cycle Day
For educational use — Pediatric Gynecology Presentation

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CASE 1: HEAVY/PROLONGED MENSES

- 12 y/o girl who presents with heavy menses since menarche at 11. She has had a total of 4 menstrual cycles. Cycle length is 9-20 days. Heaviest days using pads and period underwear, changing 4-5 times a day. +clots (quarter sized), +soaking clothes
- PMH: unremarkable, up to date on vaccinations
- FH: Maternal aunt with heavy menses since menarche
- Vitals: wnl
- Labs: Hemoglobin: 9.1 g/dL, Ferritin: 18 ng/mL

Wheeler AP, Hemingway CO. Quantifying menorrhagia and overview of nonsurgical management of heavy menstrual bleeding. Hematology Am Soc Hematol Educ Program. 2024 Dec 6;2024(1):367-375. doi: 10.1182/hematology.2024000661. PMID: 39643997; PMCID: PMC11665629.

DEFINITION OF HMB?

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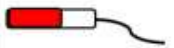
>80cc menstrual blood/cycle

HOW DO WE QUANTIFY HMB?

1. Soaking pad/tampon 2hrs or less
2. (2) Bleeding > 7days
3. (3) Clots >2.5cm

Pad Saturation	Points per Item	Day of Menses										
		1	2	3	4	5	6	7	8	9	10	n
	1											
	5											
	20											
Tampon Saturation												
	1											
	5											
	10											
Small clots (yes/no)	1											
Large clots (yes/no)	5											

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HMB – DIFFERENTIAL

STRUCTURAL

P - polyps
A - adenomyosis
L - leiomyomas
M - malignancy

NON STRUCTURAL

C - coagulopathy
O - ovulatory/ anovulation
I - Iatrogenic
E - Endometrial
N - Not yet classified

Bleeding Disorder

1 in 3 girls w/ HMB ⟶ bleeding disorder

Von Willebrand Disease (#1), Platelet Function Disorders (#2)

Immature Hypothalamic Ovarian Axis

1-2 years for majority, w/ 99% at 5 years from menarche

Munro MG, Critchley HO, Broder MS, Fraser IS; FIGO Working Group on Menstrual Disorders. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynaecol Obstet. 2011 Apr;113(1):3-13. doi: 10.1016/j.ijgo.2010.11.011. Epub 2011 Feb 22. PMID: 21345435.

Zia A, Jain S, Kouides P, Zhang S, Gao A, Salas N, Lau M, Wilson E, DeSimone N, Sarode R. Bleeding disorders in adolescents with heavy menstrual bleeding in a multicenter US cohort. Haematologica. 2020 Jul;105(7):1969-1976. doi: 10.3324/haematol.2019.225656. Epub 2019 Oct 17. PMID: 31624107; PMCID: PMC7327636. prospective

INITIAL WORKUP

- CBC
- Ferritin/Iron Studies
- PT/PTT & Fibrinogen
- vW Panel (vWF Antigen, vWF Activity, Factor VIII)
- Platelet Function Assay
- TSH & Urine Pregnancy

ACOG, 2019, reaffirmed; Obstet Gynecol 134:e71–e83; correction Obstet Gynecol 2023;141:228

Elmaoğulları S, Aycan Z. Abnormal Uterine Bleeding in Adolescents. J Clin Res Pediatr Endocrinol. 2018 Jul 31;10(3):191-197. doi: 10.4274/jcrpe.0014. Epub 2018 Feb 28. PMID: 29537383; PMCID: PMC6083466

**Ideally before any hormonal intervention (e.g., birth control started)*

FOLLOW UP

- Still with refractory HMB?
  - Infectious work-up (sexually active?)
  - Anovulatory Causes of HMB (17 OHP, DHEA-S, Free/Total Testosterone, FSH/LH, Estradiol, Prolactin)
  - Repeating coagulopathy screens

CASE 1: HMB

- 12 y/o girl was starting on continuous COCs, oral iron, and TXA for break through bleeding
- von Willebrand Activity was low, referral to hematologist, and diagnosis with von Willebrand Disease
- 6 months later her hemoglobin improved to 11.4 g/dL

TAKE AWAYS - HMB

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- HMB: >80cc
  (1) Soaking a pad/tampon in <2 hours?, (2) Menses >7 days, (3) Passing clots >2cm?
- 1 in 3 girls with heavy menstrual bleeding have an underlying coagulopathy
- Workup: CBC, Ferritin/Iron studies, Coags, vWD testing, TSH, Urine Pregnancy
- Consider (1) Tranexamic Acid, and (2) Menstrual control/suppression trial (6mo-1y) in patients w/ iron deficiency, anemia, or HMB

CASE 2

- 14 y/o with no significant PMH. Menarche since 10. Menses are every 28-34 days, has missed 1-2 months when 11 but now rarely misses menses.

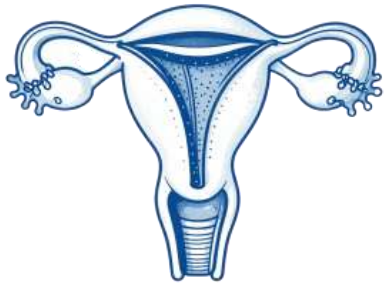
- Mom reports now sometimes missing school for period, 1-2 days/month. Taking Midol. Pain is severe. Also notes back pain in addition to cramps. Associated with nausea.

DYSMENORRHEA

Pain with menses: crampy lower abdominal/pelvic pain, back pain
Associated: nausea, vomiting, diarrhea, headache, fatigue

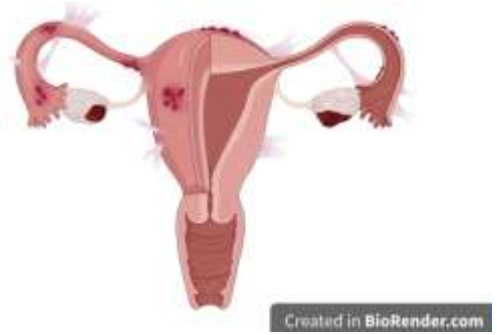
Primary Dysmenorrhea

No underlying pathology
Caused by prostaglandin release
Leads to inflammation & myometrial ischemia
Treatment: NSAIDs, hormonal suppression
Re-evaluate for secondary after 3-6 months



Secondary Dysmenorrhea

Endometriosis, adenomyosis, fibroids
Pelvic inflammatory disease
Ovarian cysts, structural anomalies
Requires further workup (pelvic ultrasound, STI screening)
GYN Mimics: Constipation, IBS/IBD



Dysmenorrhea Screening Questionnaires

Tool	Accessability of Tool	Time to complete	Adolescent validation	Validated for Endometriosis	Strengths for Use
WaLIDD score	Free, public domain; reproduced in original article	~1 minute, 4 items	Yes — validated in adolescents	No	Single best multidimensional dysmenorrhea screen for primary care
Verbal Multidimensional Scoring System (VMS, Andersch–Milsom)	Free, public domain	<1 minute, 1 grade	Yes — used in adolescents for 40+ years	No	Instant severity grade; mirrors how clinicians already think
Numerical Rating Scale (NRS-11) / Visual Analog Scale (VAS) for menstrual pain	Free, universal	~10 seconds	Yes — extensively validated in pediatric pain	NRS ≥7 associated with deep endometriosis (Kaseki 2023)	Already routinely used; rapid pain quantification
SAFE score (Simplified Adolescent Factors for Endometriosis)	Free, published 2026; 6 yes/no questions	~1–2 minutes	Yes — derived and validated in adolescents/young adults	Sens 60–64%, Spec 83% (cutoff ≥2); NPV 95%	The only endometriosis-specific tool derived in adolescents; a "do I need to refer?" decision aid
Adolescent Menstrual Bleeding Questionnaire (aMBQ)	Free; published in Res Pract Thromb Haemost	~5 minutes, 12 items	Yes — adolescent-specific validation	No	Best companion measure for HRQoL/functional impact in any adolescent with cyclic pain ± HMB

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Adolescent Dysmenorrhea: Stepwise Office Workup

STEP 1

Targeted History

Menstrual hx, pain pattern, school impact, NSAID and hormonal trials, sexual hx (confidential).
Red flags: pain from menarche, acyclic pain, dyspareunia, HMB, NSAID failure, family hx endometriosis.

STEP 2

Focused Physical Exam

Vitals, abdominal exam, Tanner stage, external genitalia inspection.
Pelvic exam NOT required for classic primary dysmenorrhea (ACOG 760).

STEP 3

Targeted Labs

Urine beta-hCG (all). GC/CT NAAT if sexually active.
CBC, ferritin, TSH only if HMB or endocrine signs. No routine CA-125.

STEP 4

Empiric Therapeutic Trial (3-6 months)

NSAIDs (ibuprofen 600-800 mg q6h or naproxen 500 mg q12h) starting 1-2 d pre-menses.
Add combined hormonal contraception if NSAID inadequate. Document response each cycle.

STEP 5

Pelvic Ultrasound if Trial Fails

Transabdominal first-line in non-sexually-active; transvaginal if sexually active or TAUS non-diagnostic.
Normal US does NOT exclude superficial peritoneal endometriosis.

STEP 6

Refer to Peds / Adolescent Gyn + Pelvic MRI

Endometriosis-protocol MRI (Lampl 2025) for deep infiltrating disease, mullerian anomaly, adenomyosis.
Diagnostic laparoscopy for refractory pain (Janssen 2013: 75% endo yield in NSAID/OCP-resistant).

Sources: ACOG 760 (2018) | ACOG Endometriosis Guideline (2026) | ESHRE (2022) | Sachedina & Todd (2020) | Janssen (2013) | Lampl (2025)

HORMONAL CONTROL/SUPPRESSION

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Estrogen & Progestin

Birth Control Pill

Patch

Ring

Progestin Only

Mini Pill

Implant

Injection

IUD

BEDSIDER
We've got you covered

NASPAG

Center for Young Women's Health
Ask Us Health Guides Guías de

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CASE 2

- 14 y/o was started on trial of scheduled ibuprofen every 6-8 hours 1-2 days prior to menses.

- Continues to miss school and 3 months later is started on cyclic COC with plan for transabdominal pelvic ultrasound and referral to gynecology for possible endometriosis evaluation

TAKE AWAYS: DYSMENORRHEA

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- Dysmenorrhea is common, suspect secondary dysmenorrhea in refractory pain >3 months after scheduled NSAIDS or OCPs
- Consider early pelvic ultrasound before trial of NSAIDs/OCPs if severe pain at start or prior to menarche
- Consider referral to PAG if >3-6 months of NSAIDs/OCPs and still QOL impact (school, activities etc.) during menses

THANK YOU! QUESTIONS?

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Non Urgent Referral (1-3 month new patient visit)

- Outside providers: Refer a Patient (Portal) or Contact Center centralized fax number 202-476-765
- CNPA and Goldberg can place referral via referral management In Cerner or request order

Urgent Clinical Inquiries (e.g., Ongoing HMB with anemia, Pelvic Mass etc.): Can email pag@childrensnational.org

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