Concern For Appendicitis

Last Revision 2/2026

Exclusion conditions:
- Prior Abdominal Surgery
- Chronic Medical Condition
- Positive Pregnancy

Begin to Assign Pediatric Appendicitis Score (PAS)

Work Up: CBC, IV, consider UA, HCG (pubertal females), CRP, Complete PAS

If PEM attending has HIGH clinical suspicion for appendicitis, consult surgery before imaging results to expedite care

→ Concern for Sepsis: see Sepsis guidelines Consult Pediatric Surgery

PAS 0-3
Low Risk/Clinical Concern
- PO challenge
- Symptomatic treatment of pain and nausea
- Reassess
- Surgical consultation or imaging not routinely required
- Consider Discharge with next day follow up ***

PAS 4-7
Indeterminate Risk/Clinical Concern
OR
PAS 8-10
Higher Risk/Clinical Concern
- NPO
- **Ultrasound Imaging Recommended**
- If high Z score consider MRI or CT
- IV treatment of pain and nausea
- IV fluids, NS 20 ml/kg bolus

IMAGING COMPLETE

Appendix Normal

Consider discharge if meets criteria*** or pursue an alternative diagnosis +/- or consider admission

Equivocal or Appendix not seen
- PAS <4 and low clinical concern on re-examination
  - PO trial
  - If PO trial is successful, discharge home with close PCP follow up and return precautions

If PO fails and/or pain recurs
- PAS 4-10 and/or high clinical concern on re-examination
  - MRI or CT
  - Only give antibiotics if agreed upon with surgical team

Diagnosis of Appendicitis or other surgical condition

Consult Pediatric Surgical Team
Inpatient admission**

Administer antibiotics after speaking with surgical team****

Outpatient imaging or preliminary reads as acute appendicitis should lead to an admission assuming it fits the clinical picture.

CT/MRI Negative

CT/MRI Positive

Authors: Francois Luks, Carl-Christian Jackson, Cassandra Sams, Frank Overly

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PAS (SCORING RANGE 0-10)	POINTS
Pain Migrating to RLQ	1
Anorexia	1
Nausea/Vomiting	1
Fever > 100.4F	1
RLQ tenderness	2
Pain with cough/percussion/hopping	2
WBC > 8K	1
ANC > 7.5K	1

IMAGING

Patients 19 years & older:

CT abdomen and pelvis with IV contrast is the first line imaging choice

These patients are not eligible for US appendix due to decreased diagnostic yield

For patients ≤ 18 years old with a **BMI Z score ≥ 2,** consider **MRI Pelvis without IV contrast** as first line imaging choice

Could consider CT abdomen and pelvis with IV contrast as clinically indicated

**ADMISSION CRITERIA

Preliminary radiology reads or outpatient imaging reporting acute appendicitis with consistent clinical picture should be admitted

Inpatient Unit	Intensive Care Unit (ICU)
• **Likely to require hospitalization > 24hrs** • **Concern for peritonitis** • **Meets CDU exclusion criteria** • **Does not require ICU level of care** • **Does not meet Discharge criteria*****	**Clinical concern for sepsis (hypotension, poor perfusion, altered mental status…)**

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***DISCHARGE CRITERIA

- **Follow up with PMD within 24 hours arranged**
- **Able to tolerate clear liquids**
- **No social or transportation barriers to return next day or appropriate follow up**
- **No insurance barriers to return for outpatient ultrasound**
- **Pain controlled with OTC medications**

****ANTIBIOTICS

- ***When should antibiotics be administered in HCED?***
  - **After the diagnosis has been confirmed by the surgical team -OR-**
  - **After a definitive imaging diagnosis of acute appendicitis by an attending Pediatric Radiologist, -AND- notification of the surgical team**
    - **For equivocal attending reads or resident-preliminary reads, please discuss with the Pediatric Surgery team before starting antibiotics**
  - **If there are concerns of sepsis**
- ***When should we advise OSH to initiate antibiotics?***
  - **If the final documented radiology interpretation of imaging is definitive for acute appendicitis, then antibiotics can be initiated.**
  - **If the final documented imaging interpretation is equivocal for acute appendicitis, and the patient is stable with no concern for sepsis, then it is preferred that antibiotics not be started.**
- ***What antibiotic regimen is preferred?***
  - **Ceftriaxone AND metronidazole once daily is the preferred antibiotic regimen at Hasbro**
  - **Piperacillin-tazobactam (Zosyn) may be considered if recent hospitalization > 4 days, immunocompromised, or very ill appearing**
  - **If an OSH is starting abx, acceptable options are:**
    - **Ceftriaxone AND metronidazole**
    - **Piperacillin-tazobactam (Zosyn)**

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ATYPICAL PRESENTATIONS, ROLE OF CRP, PAS SENSITIVITY

ATYPICAL PRESENTATIONS:

Consider imaging in patients with longer duration of illness and those in whom early scheduled follow-up cannot be assured.

CRP:

Atypical presentation could be perforated appendicitis/abscess: In those with fever, prominent vomiting, longer duration of illness, sending a CRP has been shown to be useful to identify patients with perforated appendicitis.

PAS SENSITIVITY WITH WBC 10K
(WE ARE USING A MODIFIED PAS WITH CUTOFF OF WBC 8K)

PAS score < 4
- Goldman reported 6% (5/83) had appendicitis when PAS < 4.
- Bachur found 6.8% (11/162) had appendicitis when PAS < 4.
- Bachur found a 27% false positive rate in US when PAS was < 4.

GOALS

- **To expedite care and reduce testing of patients at low risk for appendicitis**
- **To standardize evaluation of patients presenting with the concern of acute appendicitis**
- **To expedite admissions of patients with appendicitis (<60 minutes from time of consult and imaging results)**

METRICS

- **Time to diagnostic study & time to patient disposition**
- **Percentage of negative studies**
- **Returns with appendicitis within 7 days**

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REFERENCES

Macco, S., et al. Evaluation of scoring systems in predicting acute appendicitis in children. Surgery. 2016 Dec;160(6):1599-1604.

Rothrock, S.G., et al. Acute appendicitis in children: emergency department diagnosis and management. Annals of Emergency Medicine. 2000 Jul;36(1):39-51.

Hurst AL., Olson D., Somme S., Child J., Pyle L., Ranade D., et al. Once-Daily Ceftriaxone Plus Metronidazole Versus Ertapenem and/or Cefoxitin for Pediatric Appendicitis, Journal of the Pediatric Infectious Diseases Society, Volume 6, Issue 1, 1 March 2017, Pages 57–64.

Child J., Chen X., Mistry RD., Somme S., MacBrayne C., Anderson PL., et al. Pharmacokinetic and Pharmacodynamic Properties of Metronidazole in Pediatric Patients With Acute Appendicitis: A Prospective Study, Journal of the Pediatric Infectious Diseases Society, Volume 8, Issue 4, September 2019, Pages 297–302.