Exclusion Criteria:
- Children < 4 years
- Toxic appearance
- Hemodynamic instability
- Neurologic changes
- Previous appendectomy
- Pregnancy
- History of IBD
- Trauma patients
- CT done at OSH
- Ongoing treatment for malignancy
- History of organ transplant
- Severe developmental delay

Acute appendicitis can occur in ANY of above excluded patient populations, but likely require different considerations in evaluation.

Imaging Grading:
Category 0: Examination nondiagnostic/poor visualization due to habitus
Category 1: Appendix seen and normal
Category 2: Appendix not fully seen but no secondary signs of appendicitis
Category 3: Appendix not seen or not fully seen but concerning RLQ findings/ inflammation
Category 4: Positive for appendicitis

Positive (Category 4)
Contact surgery, order indicated antibiotics

Equivocal
US graded category 0, 2, or 3

Re-examine Patient. Still concerned for appendicitis?
No

Does patient have Category 3 on US ± abnormal laboratory evaluation and/or PAS?

Contact surgery, consider MRI
Yes

Negative (Category 1)
Treat for other conditions as indicated

Manage off Pathway; treat for other conditions as indicated

What were results of imaging?

Contact surgery, consider MRI
Yes

Utilize shared decision making with family to either discharge with return precautions, surgical consult, or proceed with MRI
No

Complete Pediatric Appendicitis Score (PAS) Low Risk <4 ; High risk ≥ 7
AND
Complete Pediatric Appendicitis Risk Assessment

Administer treatments, as indicated, including:
• IVF
• Analgesics
• Antiemetics
Utilize the ED Appendicitis Order Set

Obtain laboratory evaluation as indicated

Perform US for appendicitis
• Consider Pelvic US & Sexually Transmitted Infection (STI) testing in adolescent girls
• Consider MRI as first-line imaging in patients >9yo with z-score >2.5
   It is appropriate to defer imaging and obtain surgical consultation for elective appendectomy if patient has classic history and exam

Positive (Category 4)
Contact surgery, order indicated antibiotics

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Utilize shared decision making with family to either discharge with return precautions, surgical consult, or proceed with MRI.

**What were the results of MRI?**

- **Positive (Category 4)**
  - Contact surgery, order indicated antibiotics

- **Equivocal (Category 0, 2, 3)**
  - Re-examine patient. If continued concern, consult surgery

- **Negative (Category 1)**
  - Manage off Pathway; treat for other conditions as indicated

Utilize shared decision making with family to consider admission for serial exams ± repeat US in morning OR consider other imaging for an alternate diagnosis OR discharge with return precautions.

**Pediatric Appendicitis Score**
- **Low Risk** <4
- **High Risk** ≥7

**Patient Risk Assessment‡**
- **High probability acute appendicitis**
  - Symptoms <48hrs
  - Migration of pain from periumbilical region to RLQ
  - Anorexia, nausea, vomiting
  - Pain preceding vomiting
  - Pain with movement (cough, car ride, jumping, heel tap)
  - RLQ tenderness with or without tenderness

- **Equivocal acute appendicitis**
  - Presenting with focal abdominal tenderness (usually right sided) with some of the features of high probability acute appendicitis

- **Suspicious for complex appendicitis (perforation/abscess)**
  - Systemic toxicity (also exclusion criteria)
  - Fever
  - Prolonged symptoms >48-72hrs
  - Urinary or rectal urgency
  - Palpable RLQ mass
  - WBC, ANC, CRP consistent with marked inflammation

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**APPENDICITIS PATHWAY**

**EMERGENCY DEPARTMENT**

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### Laboratory Evaluation

- **All patients**
  - CBC with ANC
  - CRP
  - UA

- **As clinically indicated**
  - CMP
  - Lipase, amylase
  - Urine HCG (all female patients >11yrs/or menstruating females)
  - Urine GC/Chlamydia, vaginal swab for Trichomonas

- **Ill patients**
  - Blood Culture
  - Coagulation Studies
  - Lactate
  - Procalcitonin
  - Type and Screen (not indicated for routine appendectomy)

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### Preoperative Antibiotics

- **Healthy non-allergic patients without suspicion of perforation, abscess or phlegmon**
  - Cefoxitin IV 40mg/kg/dose (max 2,000mg)
  - (Must be adjusted in renal impairment)

- **Healthy patients without suspicion of perforation, abscess or phlegmon with cephalosporin allergy**
  - Levofloxacin IV
    - 6 month to < 5 years: 10mg/kg/dose BID (max 750mg)
    - ≥ 5 years: 10mg/kg once daily (max 750mg)
  - AND
  - Metronidazole IV 30mg/kg/dose once daily (max 1,500mg)

- **Patients with suspicion of perforation, abscess or phlegmon**
  - Piperacillin/Tazobactam IV 100mg/kg/dose (max 3,000mg)
  - (Must be adjusted in renal impairment)

- **Patients with suspicion of perforation, abscess or phlegmon with severe penicillin allergy**
  - Levofloxacin IV
    - 6 month to < 5 years: 10mg/kg/dose BID (max 750mg)
    - ≥ 5 years: 10mg/kg once daily (max 750mg)
  - AND
  - Metronidazole IV 30mg/kg/dose once daily (max 1,500mg)

- **Patients who are immunocompromised or very ill**
  - Piperacillin/Tazobactam IV 100mg/kg/dose (max 3,000mg)
  - (Consider Infectious Disease consult)

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*ChildrensOmaha.org/Pathways* Updated 09/2022

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1. WBC >11,000 AND/OR CRP >1.0 is found in 95% of non-perforated appendicitis and 100% of perforated, abscess or phlegmon appendicitis
2. If both are normal, consider an alternate diagnosis
3. If one or the other is elevated, it adds little value to the diagnostic evaluation beyond PAS score
4. UA in appendicitis may occasionally demonstrate sterile pyuria
5. Leukouria without bacteria or nitrates present should not dissuade one from the diagnosis of appendicitis