

# Acute Appendicitis Diagnostic Pathway

## Evidence Based Outcome Center

### EXCLUSION CRITERIA

- Children < 4 years of age
- Previous appendectomy
- History of bloody stools
- Crohn's disease
- History of cystic fibrosis, transplant or malignancy

Signs of a surgical abdomen: **STAT transfer to DCMC**

- Rigidity
- Guarding
- Peritonitis

#### Labs:

- UA with micro and culture
- CBC with Diff
- BMP
- Consider:
- CMP
- CRP (for hold in lab for low likelihood cases)
- *Always:* Urine pregnancy test for all post-pubescent females

### INCLUSION CRITERIA

Children ≥ 4 years of age presenting with abdominal pain and signs/symptoms highly suspicious of acute appendicitis.

Evaluate patient using the Pediatric Appendicitis Score

#### Pediatric Appendicitis Score (Appy Score)

Clinical Finding	Point Value
Migration of pain	1
Anorexia	1
Nausea/vomiting	1
Right lower quadrant (RLQ) tenderness	2
Cough/hopping/percussion tenderness in RLQ	2
Elevation of temperature	1
Leukocytosis (≥ 10,000)	1
Neutrophils plus band forms >7500 cells/microL	1

*\*The APPY SCORE is the cumulative point total from all clinical findings.*

APPY SCORE:  
≤ 4 – low suspicion of Appendicitis

#### Manage OFF PATHWAY

Explore alternate diagnosis or discharge home if criteria are met

#### ED Discharge Criteria

- Tolerating liquids
- Pain able to be controlled at home
- Ambulating
- Benign abdominal exam

APPY SCORE:  
5-7 – equivocal suspicion of Appendicitis

#### Order

- Analgesia(as warranted)
- IVF hydration

Order Labs (as necessary) ⓘ

Refer to ED pain management guidelines  
Child Life Consult

#### Order

- RLQ Ultrasound (US) Limited
- Consider pelvic US for teenage girls

**(Consider transfer to DCMC for 24/7 Ultrasound)**  
Transfer number: **512-324-3515**

APPY SCORE:  
≥ 8 – high suspicion of Appendicitis

#### Order

- Analgesia(as warranted)
- IVF hydration

Order Labs (as necessary) ⓘ

Refer to ED pain management guidelines  
Child Life Consult

**(Consider transfer to DCMC for 24/7 Ultrasound)**  
Transfer number: **512-324-3515**

#### Transfer to DCMC: 512-324-3515

#### Pre-transfer Checklist

- Evaluate for sepsis/sirs
- IVF resuscitation
- Pain control
- NPO

Image positive for Appendicitis

No

Yes

Equivocal OR Appendix not seen

Consider transfer to DCMC (**512-324-3515**)  
for surgery consult  
**AND**  
Decision to CT scan

Always consider testicular torsion in males when appendicitis work up is negative and pain persists.



## Acute Appendicitis Diagnostic Pathway Evidence Based Outcome Center

Key Points
Document pediatric appendicitis score
When ordering imaging document reason as: Suspect appendicitis
Pain control is important for exam and does not mask signs of appendicitis
DCMC has 24/7 ultrasound access and well trained technicians

Pediatric Appendicitis Ultrasound Score		
Clinical Finding	Score	Outcome
Normal completely visualized appendix	1	Negative ultrasound
Partially-visualized appendix: No findings to suggest appendicitis	2	Negative ultrasound
Non-visualized appendix: No findings to suggest appendicitis	3	Equivocal ultrasound
Equivocal Study: Peri-appendiceal inflammation or borderline appendiceal enlargement but otherwise normal appendix	4	Equivocal ultrasound
Appendicitis (with or without abscess)	5	Positive ultrasound

Pain Management			
Drug	Delivery	Dose	MAX DOSE
Fentanyl	Intranasal	2 mcg/kg	100 mcg
Morphine*	IV	.05 - 0.1 mg/kg	4 mg per dose
*Recommend 2 mg IV increments for opiate naïve and titrate to effect			

Key Metrics	
Metric	Definition
Compliance with American College of Radiologists Computed Tomography recommendation	Percentage of patients who received an ultrasound prior to receiving computed tomography imaging
Utilization of Pediatric Appendicitis Score	Percentage of patients diagnosed with appendicitis that have a documented score in the HER
Pre-operative Computed Tomography Utilization Rate	Percentage of patients diagnosed with appendicitis that received computed tomography imaging 24hrs prior to surgery
Ultrasound accuracy	Percentage of patients with a Pediatric Appendicitis Ultrasound Score of 5 that were diagnosed for appendicitis
Ultrasound false negative rate	Percentage of patients with a Pediatric Appendicitis Ultrasound Score of 1 that were diagnosed for appendicitis

