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

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

**Pediatric Appendicitis Score (Appy Score)**

<table>
<thead>
<tr>
<th>Clinical Finding</th>
<th>Point Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration of pain</td>
<td>1</td>
</tr>
<tr>
<td>Anorexia</td>
<td>1</td>
</tr>
<tr>
<td>Nausea/vomiting</td>
<td>1</td>
</tr>
<tr>
<td>Right lower quadrant (RLQ) tenderness</td>
<td>2</td>
</tr>
<tr>
<td>Cough/hopping/percussion tenderness in RLQ</td>
<td>2</td>
</tr>
<tr>
<td>Elevation of temperature</td>
<td>1</td>
</tr>
<tr>
<td>Leukocytosis (≥ 10,000)</td>
<td>1</td>
</tr>
<tr>
<td>Neutrophils plus band forms &gt;7500 cells/microL</td>
<td>1</td>
</tr>
</tbody>
</table>

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

**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

**APPY SCORE:**
- ≤ 4 – low suspicion of Appendicitis
- 5-7 – equivocal suspicion of Appendicitis
- ≥ 8 – high 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

**Pre-transfer Checklist**
- Evaluate for sepsis/sirs
- IVF resuscitation
- Pain control
- NPO

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

**Evaluate patient using the Pediatric Appendicitis Score**

**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

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

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

For questions concerning this pathway, Click Here
Last Updated December 6, 2016
### Acute Appendicitis Diagnostic Pathway

#### Evidence Based Outcome Center

#### Key Metrics

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

#### Pain Management

<table>
<thead>
<tr>
<th>Drug</th>
<th>Delivery</th>
<th>Dose</th>
<th>MAX DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl</td>
<td>Intranasal</td>
<td>2 mcg/kg</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Morphine*</td>
<td>IV</td>
<td>.05 - 0.1 mg/kg</td>
<td>4 mg per dose</td>
</tr>
</tbody>
</table>

*Recommended 2 mg IV increments for opiate naïve and titrate to effect*

#### 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

<table>
<thead>
<tr>
<th>Clinical Finding</th>
<th>Score</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal completely visualized appendix</td>
<td>1</td>
<td>Negative ultrasound</td>
</tr>
<tr>
<td>Partially-visualized appendix: No findings to suggest appendicitis</td>
<td>2</td>
<td>Negative ultrasound</td>
</tr>
<tr>
<td>Non-visualized appendix: No findings to suggest appendicitis</td>
<td>3</td>
<td>Equivocal ultrasound</td>
</tr>
<tr>
<td>Equivocal Study: Peri-appendiceal inflammation or borderline appendiceal enlargement but otherwise normal appendix</td>
<td>4</td>
<td>Equivocal ultrasound</td>
</tr>
<tr>
<td>Appendicitis (with or without abscess)</td>
<td>5</td>
<td>Positive ultrasound</td>
</tr>
</tbody>
</table>