

Appendicitis Management Pathway

Version: 3

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1.0 Introduction

This pathway is for use with children aged 2-18 years old with no underlying disease or co-morbidity who have a confirmed diagnosis of appendicitis (either non-perforated or perforated) by the General Surgery Team and require a surgical appendectomy or medical management. Patients are to be removed from this pathway if there are significant postoperative complications (e.g. bowel obstruction or prolonged TPN) or a change in diagnosis.

The care pathways attached refer to patients admitted post-operatively. For patients with uncomplicated appendicitis discharged on day of surgery, discharge criteria are:

- Vital signs at baseline or within 10% of baseline vitals
- Good pain control: numeric rating score of less than 7/10 or pain word scale "medium" or less
- Tolerating clear fluids
- Able to transport safely home with family
- AVS reviewed with patient and family and PIV discontinued

Target Users

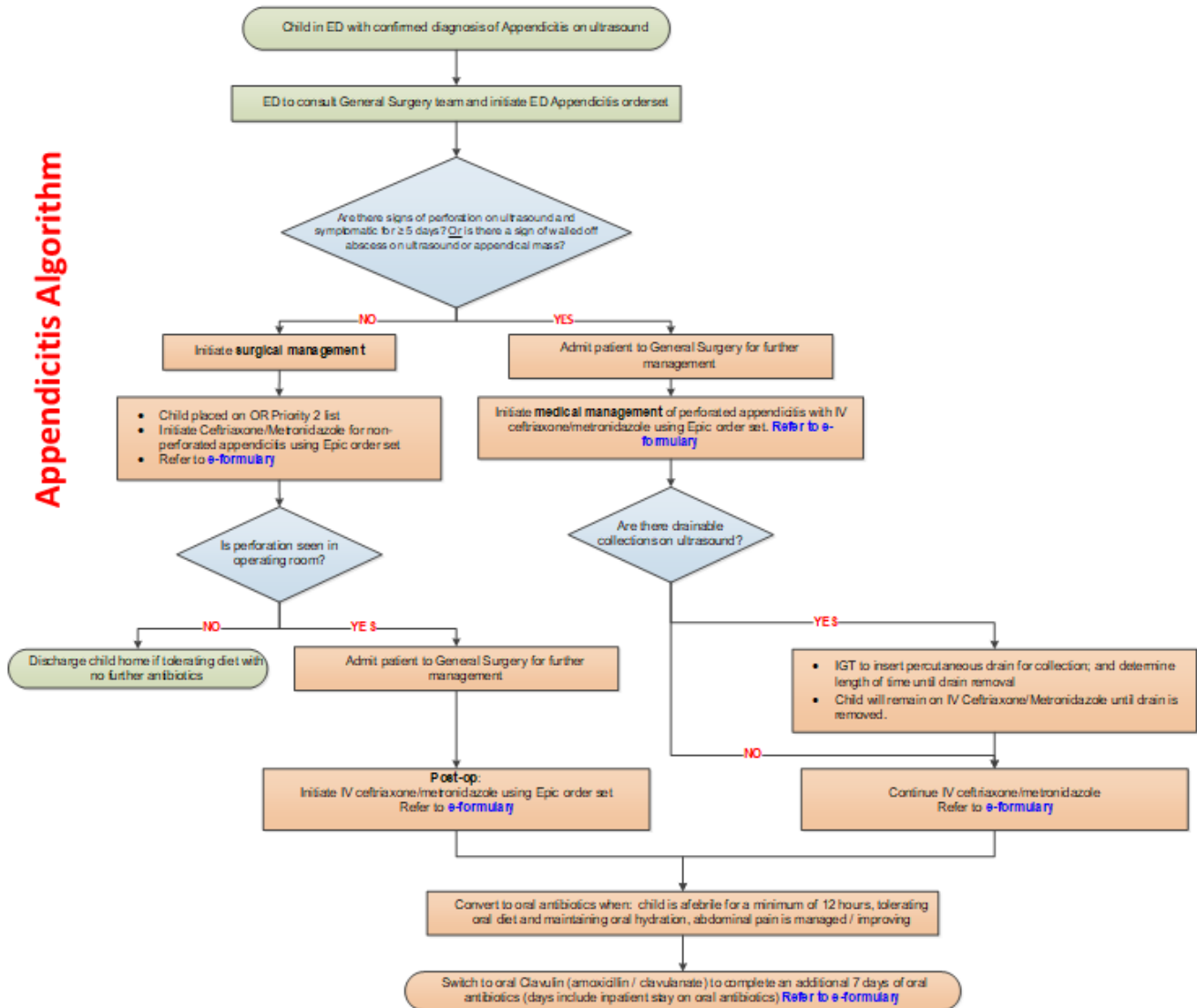
- General Surgery Surgeons, Residents, Fellow, Nurse Practitioners, and nurses on the inpatient units

2.0 Definitions

- **Non-perforated appendicitis**- Appendix is normal, injected, inflamed or suppurative. Presence of cloudy fluid +/- local fibrinous exudate, or gangrenous appendicitis but with no visible hole in appendix, abscess or free fecalith
- **Perforated appendicitis**- Visible hole in appendix, free fecalith, diffuse peritonitis with fibrinous exudate or abscess
- **Appendectomy**- surgical removal of the appendix
- **Fever**- a fever is defined as any temperature reading greater than 38°C

3.0 Recommendations - [Printable Version](#)

Appendicitis Algorithm



*If the patient clinically worsens, consider upgrade to IV piperacillin/tazobactam. If no ultrasound within the past 2-3 days, repeat in order to evaluate for drainable collection. If collection found, refer to algorithm for patient with drainable collections (IGT).

**Alternative oral antibiotic therapy with Ciprofloxacin and Metronidazole may be considered in setting of confirmed beta-lactam allergy

***Antibiotic therapy should be reassessed based on any available microbiological data (ie- if cultures are obtained from an abdominal abscess aspiration)

**** A fever is defined as any temperature reading greater than 38° C (refer to Sepsis Clinical Pathway)

Inpatient Non-Perforated Appendicitis Care Pathway

	PRE-OPERATIVE	POST-OPERATIVELY	DISCHARGE: WITHIN 24 HOURS POST-OP
GOALS	1. Hydration maintained 2. Adequate pain control 3. Patient prepared for OR 4. Child/family are advised of pre-op bath. Wipes to be used upon arrival. Refer to procedure document	1. Afebrile 2. Adequate pain control 3. Ambulating 4. Able to tolerate diet (clear fluids to regular diet) 5. Incision intact, no drainage; dry and intact	1. Afebrile 2. Adequate pain control 3. Ambulating 4. Able to tolerate diet 5. Incision dry and intact 6. Child/ caregiver teaching
PHYSICAL EXAM	• Obtain history • Complete physical exam • Assess vital signs • Complete pain assessment (refer to Pain Assessment Guidelines) • Obtain accurate in and out	• Complete pain assessment every 4 hours • Ensure child has adequate pain control (refer to Pain Management Guidelines) • Monitor vital signs as per Bedside Pews (refer to Sepsis Clinical Pathway) • Obtain accurate in and out • Complete wound assessment • Complete abdominal assessment	
DIET & IV FLUIDS	• Ensure that patient is NPO • Administer D5W and 0.9 NaCl with 20mmol KCl/L at maintenance • Bolus as indicated • Refer to Fluid and Electrolyte Guidelines	• Clear fluids to regular diet as tolerated • IV to maintenance; TKVO once adequate oral fluid intake • Bolus as indicated • Refer to Fluid and Electrolyte Guidelines	
MEDICATION	• Ceftriaxone/Metronidazole IV; if allergy then Clindamycin or Ciprofloxacin & Metronidazole. Refer to the e-formulary • Pain medication as needed; morphine/ acetaminophen/ NSAIDs. Refer to the e-formulary	• Acetaminophen as needed for pain/fever • Ketorolac or ibuprofen as needed for pain management • Morphine IV bolus PRN	
ACTIVITY & EDUCATION	• Activity: as tolerated • Consent for surgery • Pre-op procedures for child and caregiver • Review parental involvement in care (pre and post-operatively)	Diet: • Advance diet as tolerated Pain: • Acetaminophen and ibuprofen (if not contraindicated) for 48 hours then as needed • Review need for pain management Incision care: • Leave steri-strips until fall off on own or remove after 10 days • Once steri-strips removed, may wash incision gently with soap and water Signs and symptoms of wound infection: • Fever • Redness around incision • Drainage from incision • Increasing pain around incision Bathing: • May shower or bathe; 48 hours after surgery Activity: • Ambulate in hallway • May return to normal daily activities as patient feels able	When to call surgeon's office: • Wound infection • Vomiting • Fever • Pain Follow-up: • Confirm need for follow-up with Primary Surgeon • Family doctor/pediatrician in 1-2 weeks

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Inpatient Perforated Appendicitis Care Pathway

	DAY OF ADMISSION	DAY # 1	DAY # 2 - # 3	DAY # 4	DAY # 5
GOALS	1. Hydration maintained 2. Adequate pain control 3. Patient prepared for OR if surgical management required 4. Child/family are advised of pre-op bath, Wipes to be used upon arrival. Refer to procedure document	1. Afebrile 2. Adequate pain control 3. Ambulating 4. Able to tolerate clears (immediately post-op) 5. Incision intact, no drainage; dry and intact 6. If Nasogastric Tube present, advance from intermittent suction to straight drainage	1. Afebrile 2. Adequate pain control 3. Ambulating 4. Able to tolerate regular diet 5. Incision dry and intact 6. If Nasogastric Tube present, advance from straight drainage to clamp and remove	1. Afebrile 2. Adequate pain control 3. Ambulating 4. Able to tolerate regular diet 5. Incision dry and intact 6. Child and family understand discharge teaching 7. Able to tolerate oral antibiotics	
PHYSICAL EXAM	• History & Physical • Vital Signs • Height and Weight • Pain Assessment (focus on abdominal) every 4 hours • Accurate In & Out		• Vital signs as per BPEWS (Refer to Sepsis Clinical Pathway) • Pain assessment (focus on abdominal) every 4 hours • Adequate pain control • Accurate In & Out • Wound assessment (remove surgical dressing, leave steri-strips) • Abdominal assessment		
IV FLUIDS	• D5W & 0.9% NaCl with 20mmol KCl/L • Bolus as clinically indicated with 0.9% NS or Lactated Ringer's • Refer to Fluid and Electrolyte Guidelines	• D5W & 0.9% NaCl with 20mmol KCl/L at maintenance • Bolus as clinically indicated with 0.9% NS or Lactated Ringer's • Refer to Fluid and Electrolyte Guidelines	• Maintenance until adequate oral fluid intake and then TKVO		
DIET			• Diet as tolerated • If NPO, ensure that child is receiving IV fluids with D5W • Assess need for PN therapy		
MEDICATIONS	Pre-operatively: • Pain medication as needed (morphine / acetaminophen) • Start Q24h dosing of IV ceftriaxone and metronidazole (Refer to e-formulary for dosing) Post-operatively: • Acetaminophen as needed for pain/fever • Morphine IV as required • Please check with Primary Surgeon if NSAIDs can be prescribed (Ketorolac vs. ibuprofen). • Q24h dosing of IV ceftriaxone and metronidazole until child is tolerating oral diet and afebrile for 12 hours (Refer to Appendicitis Management Pathway Algorithm (Refer to e-formulary for dosing)	Pain management: • If on morphine infusion, wean as tolerated • Acetaminophen every 4 to 6 hours for 48 hours then as needed for pain/fever • Ketorolac or ibuprofen every 6 hours for 48 hours Antibiotics: • Q24h dosing of IV ceftriaxone and metronidazole • Consider switching to oral antibiotics - Clavulin (amoxicillin/clavulanate) to complete an additional 7 day course) when child is afebrile for a minimum of 12 hours, tolerating oral diet and maintaining oral hydration and abdominal pain is well managed/improving • Refer to e-formulary for dosages • Refer to Appendicitis Algorithm			
ACTIVITY	• Ambulating		• Ambulating to chair daily • Progress to ambulating in hallway X 5		
DIAGNOSTIC IMAGING	• Consider an abdominal ultrasound to evaluate for drainable intra-abdominal collection if child is not improving or clinically worsens • If collection is found, refer to Appendicitis Algorithm for child with drainable collection				
FAMILY / CAREGIVER EDUCATION	• Pre-op procedures for parent and child • Consent for surgery signed	• When diet will be started • Need for pain management • Need for mobilizing • Parental involvement in care	Incision care: • Leave steri-strips until fall off on own or remove after 10 days • Once steri-strips removed, may wash incision gently with soap and water Signs and symptoms of wound infection: • Fever • Redness around incision • Drainage from incision • Increasing pain around incision Bathing: • May shower or bathe; 48 hours after surgery Activity: • Ambulate in hallway at least 5 times • May return to normal daily activities as patient feels able	When to call surgeon's office: • Wound infection • Vomiting • Fever • Pain Follow-up: • Confirm need for follow-up with Primary Surgeon • Family doctor/pediatrician in 1-2 weeks	

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4.0 Related Documents

[E-formulary](#)

[Sepsis Pathway](#)

[Pain Management Guidelines](#)

[Pain Assessment Guidelines](#)

[Fluid & Electrolyte Guidelines](#)

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Attachments:

[appendicitis algorithm.pdf](#)

[Non perforated appy pathway.pdf](#)

[Perforated appy pathway.pdf](#)