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 who require a surgical appendectomy or medical management. Patients are to be removed from this pathway if there are significant postoperative complications (eg. bowel obstruction or prolonged TPN) or a change in diagnosis.

Target Users

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

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
Appendicitis Algorithm

Recommendations - Printable Version

If child in ED with confirmed diagnosis of Appendicitis on ultrasound:

ED to consult General Surgery team and initiate ED Appendicitis workup.

- Is there a shift of position on ultrasound?
- Symptoms for > 2 days? Is there a shift of position or evidence of an ultrasound abnormality?

- Initiate surgical management
- Admit patient to General Surgery for further management

- Are there draining collections on ultrasound?

- Discharge child home if discharge criteria met and no further antibiotics needed.

- Initiate IV ceftriaxone and metronidazole following Epic order set. Refer to Infectious Disease.

Post-op:

- Convert to oral antibiotics when child is able to tolerate a minimum of 12 hours of oral diet and maintaining oral hydration, antibiotic pass is managed/improving

- Switch to oral Cefaclor (or equivalent) to complete additional 7 days of oral antibiotics (days include equivalent stay on oral antibiotics). Refer to Infectious Disease.

IOT to insert percutaneous drain for collection, and determine length of time until drain removal.

- Child will remain on IV Ceftriaxone/Metronidazole until drain is removed.

- If patient clinically worsens, consider upgrade to IV clindamycin/clindamycin. If no ultrasound within the past 2-3 days, repeat in order to rule out drainable abscess.

- Inpatient antibiotics may be continued in setting of confirmed bacteraemia.

- Antibiotics 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 Severe Clinical Pathway.

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Appendicitis Management Pathway
### Inpatient Non-Perforated Appendicitis Care Pathway

#### Pre-Operative
- Hydration maintained
- Adequate pain control
- Painful prepared for OR
- Care of family is advised of pre-op bath. Wipes to be used upon arrival. Refer to procedure document.

#### Physical Exam
- Obtain history
- Complete physical exam
- Assess vital signs
- Complete pain assessment (refer to Pain Assessment Guidelines)
- Obtain accurate in and out

#### Intravenous Fluids
- Ensure that patient is NPO
- Admit IV D5W and 0.9% NaCl with 20ml of KCl at maintenance
- Status as indicated
- Refer to Fluid and Electrolyte Guidelines

#### Medication
- Activity as tolerated
- Cease for surgery
- Pre-operative procedures for child and caregiver
- Review parental involvement in care (pre and post-operatively)

#### Diet
- Advance diet as tolerated

#### Pain
- Acetaminophen and/or ibuprofen (if not contraindicated) for 48 hours then as needed
- Review need for pain management

#### Inclusion care:
- Leave skin-stripped and fall off on own or removed after 10 days
- Once skin-stripped removed, wash incision gently with soap and water

#### Signs and symptoms of wound infection:
- Fever
- Redness around incision
- Drainage from incision
- Increasing pain around incision

#### Battle:
- May shower or bath, 48 hours after surgery
- Activity:
  - Ambulate in hallways
  - May return to normal daily activities as patient feels able

#### Post-Operative

<table>
<thead>
<tr>
<th>Goal</th>
<th>Post-Operative</th>
<th>Discharge: Within 24 hours Post-Op</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Albumin</td>
<td>2. Adequate pain control</td>
<td>1. Albumin</td>
</tr>
<tr>
<td>3. Arterialing</td>
<td>4. Able to tolerate diet (clear fluids to regular diet)</td>
<td>5. Adequate pain control</td>
</tr>
</tbody>
</table>

#### Evaluation
- Refer to Pain Management Guidelines
- Monitor vital signs as per Bedside Pears (refer to Perioperative Pathway)
- Obtain accurate in and out
- Complete wound assessment
- Complete abdominal assessment
- Clear fluids to regular diet as tolerated
- IV to maintenance, TNAO once adequate oral fluid intake
- Status as indicated
- Refer to Fluid and Electrolyte Guidelines
- Acetaminophen as needed for pain/fever
- Intraderm or burnex as needed for pain management
- Morphine IV bolus PRN

#### Follow-up
- Confirm need for follow-up with Primary Surgeon
- Family doctor/healthcare can see in 1-2 weeks
## Inpatient Perforated Appendicitis Care Pathway

### Day 1
1. Hydration maintenance
2. Adequate pain control
3. Patient prepared for OR if surgical management required
- Gastrostomy tubes are inserted of orogastric tube. Vomiting is to be used upon arrival. Refer to [procedure description](#).

### Day #2 - #3
1. Alfahesin
2. Adequate pain control
3. Antibiotics
4. Able to tolerate clear fluids (immediately post-op)
5. Intravenous, no drainage, dry and intact
6. If Nasojejunal Tube present, advance from intermittent suction to straight drainage

### Day #4
1. Alfahesin
2. Adequate pain control
3. Antibiotics
4. Able to tolerate regular diet
5. Incision dry and intact
6. Diet as tolerated: Advance per Hospital diet
7. Maintain until adequate oral fluid intake and then TKO

### Day #5
- Vital signs as per IPERIEM (Refer to Sepsis Clinical Pathway)
- Pain assessment (focus on abdomen) every 4 hours
- Accurate In & Out
- Wound assessment (remove surgical dressing, leave skin strips)
- Abdominal assessment
- Maintain adequate oral fluid intake until discharged

### Pain management:
- If oral morphine infusion, reassess as tolerated
- Antacids every 4-6 hours for 48 hours then as needed for pain
- Ketorolac or ibuprofen every 6 hours for 48 hours

### Antibiotics:
- QD/day dosing of IV ceftriaxone and metronidazole
- Consider switching to oral antibiotics - Ceftin (i.e.: Amoxicillin/Clavulanate) to complete an additional 7-day course when child is able to tolerate a minimum of 12-hours, tolerating oral diet and maintaining oral hydration and abdominal pain is well managed/Improving
- Refer to [antibiotic guidelines](#)

### Activity
- Ambulating
- Ambulating to chair daily
- Progress to ambulating in hallway X 5

### Signs and symptoms of wound infection:
- Fever
- Redness around incision
- Drainage from incision
- Increasing pain around incision

### Bathing:
- May shower or bath 48 hours after surgery

### When to call surgeon's office:
- Wound infection
- Vomiting
- Fever
- Pain

### Follow-up:
- Confirm need for follow-up with Primary Surgeon
- Family doctor/edermatologist

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### PRINTABLE VERSION

#### Related Documents

- E-formulary
- Sepsis Pathway
- Pain Management Guidelines
- Pain Assessment Guidelines
- Fluid & Electrolyte Guidelines

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Guideline Group and Reviewers

Guideline Group Membership:
1. Monping Chiang, NP, General and Thoracic Surgery
2. Dr. Joshua Ramjist, Fellow, General and Thoracic Surgery
3. Dr. Augusto Zani, Surgeon, General and Thoracic Surgery
4. Dr. Annie Fecteau, Surgeon, General and Thoracic Surgery

Internal Reviewers:
1. Kealey Clarke, RN, Quality Leader- 5B General Surgery
2. Sabrina Boohan, Clinical Pharmacist- 5B General Surgery
3. Christine McGovern, Sr Clinical Manager- 5B General Surgery

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appendicitis algorithm.pdf
Non perforated appy pathway.pdf
Non perforated appy pathway.rtf
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