BAPS | British Association of Paediatric Surgeons

RCS ADVANCING SURGICAL STANDARDS

2014

Commissioning guide:

Paediatric Emergency Appendicectomy

Commissioned and facilitated by

NHS East Midlands Strategic Clinical Networks

Sponsoring Organisation: British Association of Paediatric Surgeons
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Introduction

Annually in England around 12,000 emergency appendicectomies are performed[1] in children under 18 years of age. The majority, 80%, are admitted and managed at DGH's the remaining 20% being admitted to Specialised Paediatric Units[1].

Many other children present acutely with non-specific abdominal pain requiring in-patient assessment, outnumbering those with acute appendicitis by a ratio of 4:1[2, 3].

This is not intended as a comprehensive guide for the management of paediatric patients presenting with abdominal pain.

1. High Value Care Pathway for acute appendicitis

1.1 Primary care

- Acute pain of recent onset associated with localised peritonism is a good predictor for secondary referral [4,5]
- Children under 5 years of age often present with peritonitis[6] and should be referred to a specialised Paediatric Surgical Unit
- If there is abdominal pain associated with diarrhoea persisting longer than 5 days consider referral for assessment to exclude a pelvic collection secondary to appendicitis
- The differentiation of appendicitis from non-specific abdominal pain can be challenging [2,3,5,7], the table below summarises the differences, but if there is uncertainty the patient should be referred to secondary care for assessment[8].
- Rectal examination should not be carried out in primary care

	Appendicitis	Non-specific abdominal pain
Presentation	• Acute	• Often recurrent
Symptoms	• Central to RIF pain/anorexia/vomiting • Dysuria & diarrhoea may mimic UTI or gastroenteritis	• Vague localisation of abdominal pain • No associated symptoms
Examination	• Flushed/pyrexial/avoids moving	• Exaggerated responses/apyrexial

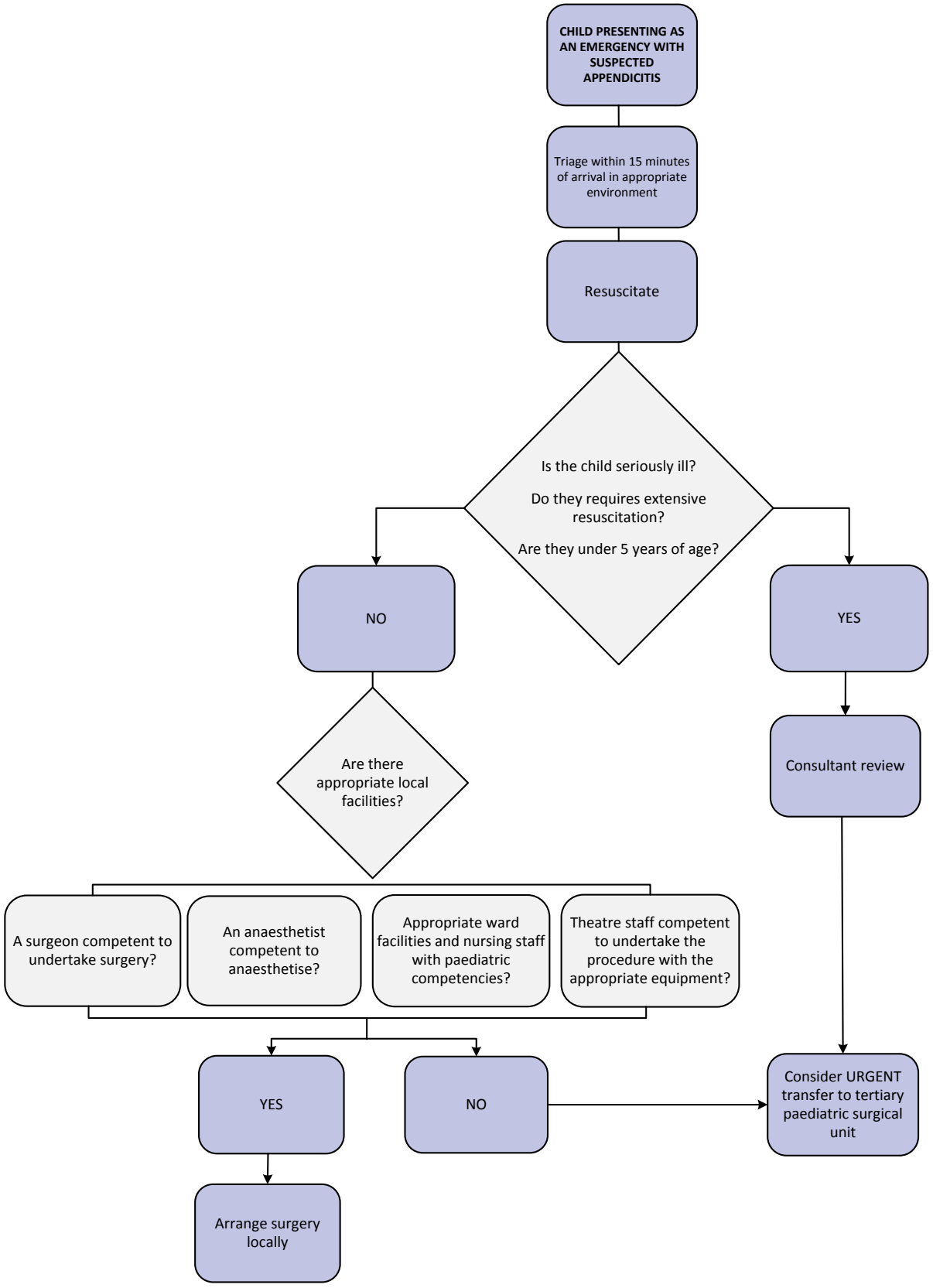
	• Raised respiratory rate, tachycardia • Tender RIF with peritonism	• Findings non-focal/not reproducible
Referral	• To local hospital	• Observe & refer to local hospital for assessment if ongoing concerns

1.2 Secondary and Tertiary Care

- Care should be provided within a managed clinical network of secondary and tertiary care providers[9,10,12,20]
- Triage and measurement of vital signs should be completed on arrival in an appropriate setting [10, 11]
- The senior surgical decision maker should assess all children on admission to agree and action appropriate management with the on call consultant surgeon[12,13,17]
- There must be 24 hour access to a named consultant paediatrician [19]
- An unwell child under 5 years, with suspected peritonism should be referred urgently to a specialised Paediatric Surgical Unit
- Appropriate radiology[14] and laboratory services must be available.
- Children must be cared for in an appropriate child friendly environment
- Children undergoing surgery must have a pain management plan which includes post-operative and discharge analgesia [12,13,18]
- Trusts must ensure they have protocols and procedures in place to identify a deteriorating child and alert appropriately trained personnel [12,15,17]
- All staff who come into contact with children and young people are trained in safeguarding to an appropriate level as defined in the intercollegiate framework: *Safeguarding Children and Young people: roles and competences for health care staff* [16,18]
- There should be defined arrangements for emergency transfer if required [12,15]

  The decision on whether the appendicectomy should be done via an open or laparoscopic route is dependent on the individual patient and should be decided by the operating surgeon.
- Appropriate information in a range of formats and support must be available to parents/children to enable them to fully participate in decisions about the care of their child.

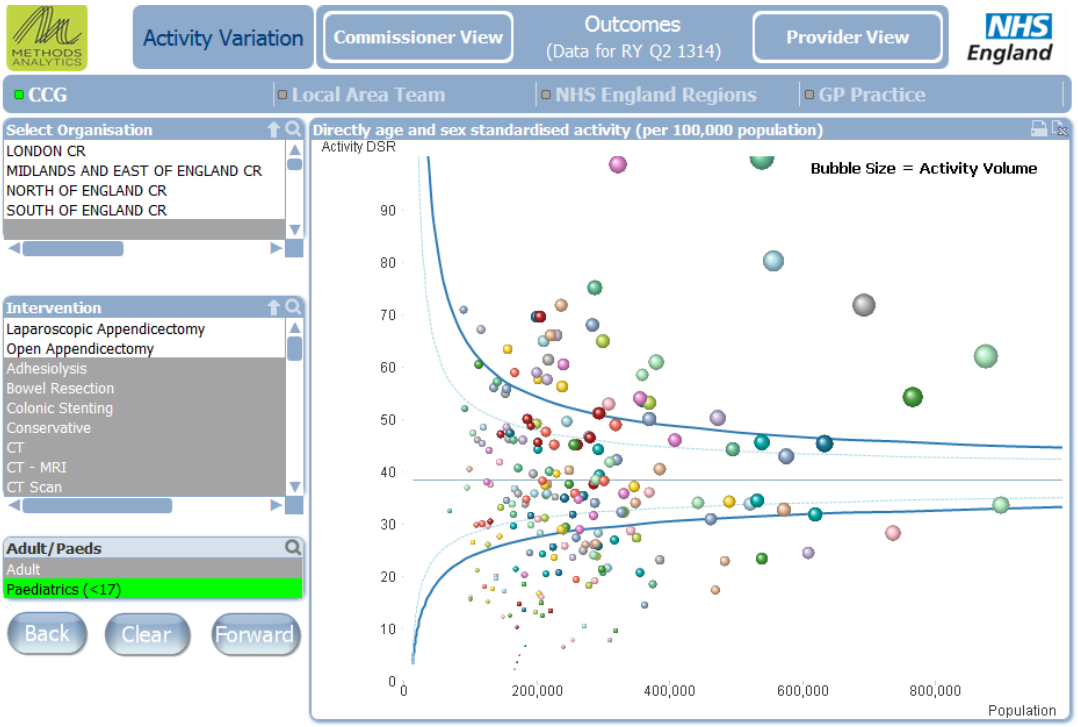
1.3 Flow diagram for children requiring surgical intervention



2. Procedures explorer for acute appendicitis

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCG's to start a conversation with providers who appear to be 'outliers' from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the Royal College of Surgeons website.



The screenshot above shows the activity in CCGs for operative treatment of right iliac fossa pain, for the year ending September 2013, in patients under 17 years.

See Appendix 1 for the OPCS and ICD-10 codes used to capture data on management of right iliac fossa pain

3. Quality dashboard for acute appendicitis

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The quality dashboard is available via the Royal College of Surgeons website.

4. Levers for implementation

4.1 Audit and peer review measures

The following measures and standards are those expected. Evidence should be available to commissioners if requested.

Measure	Standard
Member of local GPS Network	Provider can demonstrate participation in the Network
Compliance with network audits	Involvement and provision of audit data to the Network
Appraisal	General paediatric surgery activity/training should be included in annual appraisal and revalidation

4.2 Quality Specification/CQUIN

Commissioners may wish to include the following measures in the Quality Schedule with providers. Improvements could be included in a discussion about a local CQUIN.

Measure	Description	Data specification (if required)
Timely intervention	Percentage of appendicectomies within 12 hours of decision to operate	>90%
Diagnostic accuracy	Percentage of negative appendicectomies	<15%
Length of stay	Provider demonstrates median length of stay	HES
28 day readmission	Provider reports numbers	HES
Transfer	Provider reports numbers and receiving unit Number of patients transferred post surgery	HES
Admission following discharge without surgery	% admitted following discharge when previously seen but not admitted	<1%

5. Directory

5.1 Patient Information

Name	Publisher	Link
Information for parents/carers on appendicectomy	British Association of Paediatric Surgeons (BAPS)	www.baps.org.uk/resources/documents/appendicectomy/
Acute appendicitis in children	Patient.co.uk	www.patient.co.uk/doctor/Acute-Appendicitis.htm
Parent/carer information on anaesthetia	Royal College of Anaesthetists (RCoA)	http://www.rcoa.ac.uk/childrensinfo
Parent/carer information on appendicitis	NHS Choices	www.nhs.uk/conditions/Appendicitis/Pages/Introduction.aspx
Local trust patient/carer information	Local trust or network	Should be available via local trust website and in hard copy

5.2 Clinician information

Name	Publisher	Link
Standards for Children's Surgery, 2013	Children's Surgical Forum (RCSEng)	www.rcseng.ac.uk/publications/docs/standards-in-childrens-surgery
Surgery for Children: Delivering a First Class Service	Children's Surgical Forum (RCSEng)	www.rcseng.ac.uk/publications/docs/CSF.html
Guidance for Provision of Paediatric Anaesthesia	Royal College of Anaesthetists (RCoA)	www.rcoa.ac.uk/gpas2013
Standards of care for critically ill children	The Paediatric Intensive Care Society (PICS)	www.ukpics.org.uk/documents/PICS_standards.pdf
Are we there yet? A review of organisational and clinical aspects of children's surgery	NCEPOD	www.ncepod.org.uk/2011report1/downloads/SIC_summary.pdf

6. Benefits and risks of implementing this guide

Consideration	Benefit	Risk
Patient outcome	• Ensure access to the best quality and timely clinical management	
Patient safety	• Reduce delayed recognition of acute appendicitis & improve management of children • Reduce risk of complications	
Patient experience	• Improve access to patient information	
Equity of access	• Support access to effective local care	• Selected patients and carers required to travel greater distances to receive care
Resource impact	• Reduce unnecessary referral and intervention • Reduce length of stay	• Resource required to maintain and establish operational delivery networks • Failure of repatriation to secondary care

7. Further information

7.1 Research recommendations

- Management of the appendix mass

7.2 Other recommendations

- Maintenance and establishment of managed clinical networks
- Standards for engagement with and transfer to tertiary paediatric services

7.3 Evidence base

1. Trends in Children's Surgery 1994-2005.Evidence from Hospital Episodes Statistics Data. 2007. Hugh Cochrane & Stuart Tanner, DOH
2. Brekke M., Eilersten RK. Acute abdominal pain in general practice: tentative diagnoses and handling. A descriptive study. 2009. *Scandinavian Journal of Primary Health Care*; 27(3):137-40
3. Buddinggh KT, Wieselmann E, Heineman E, Broens PM. 2012. Constipation and nonspecific abdominal pain in teenage girls referred for emergency surgical consultation. *Journal of Pediatric Gastroenterology & Nutrition;* 54(5):672-6
4. Kulik DM, Uleryk EM, Maguire JL. Does this child have appendicitis? A systematic review of clinical prediction rules for children with acute abdominal pain. 2013. *Journal of Clinical Epidemiology*; 66(1):95-104
5. Blundy DG, Byerley JS, Liles EA, Perrin EM, Katznelson J, Rice HE. 2007. Does this child have appendicitis? *JAMA* ;298(4):438-51
6. Bansal S, Banever GT, Karrer FM, Partick DA. Appendicitis in children less than 5 years old: influence of age on presentation and outcome. 2012. *American Journal of Surgery* ;204(6):1031-5; discussion 1035
7. Chitkara DK, Rawat DJ, Talley NJ. The epidemiology of childhood recurrent abdominal pain in western countries: a systemic review. 2005. *American journal of Gastroenterology* ; 100(8):1868-75
8. Evans C, van Woerden HC. J .The effect of surgical training and hospital characteristics on patient outcomes after paediatric surgery: a systematic review. 2011.*Pediatr Surg* ;46(11):2119-27
9. Ensuring the provision of General Paediatric surgery in the district General Hospital: Guide to commissioners and service planners, Children's Surgical Forum. 2010. *Royal College of Surgeons of England*
10. Standards for Children's surgery: Children's Surgical Forum. 2013. *Royal College of Surgeons of England*
11. National Service framework for Children Young People and Maternity services: Core Standards. 2004. *Department of Health*
12. Surgery in Children: Are we there yet? A review of organisational and clinical aspects of children's surgery. 2011. *National Confidential Enquiry into Patient Outcome and Death*.
13. Surgery for Children: Delivering a First Class Service. Children's Surgical Forum. 2007.*Royal College of Surgeons of England*
14. Delivering Quality Imaging Services for Children: A report from the National Imaging Board 2010
15. Guidance on the provision of paediatric anaesthetic services' – Chapter 8 in Guidelines for the provision of Anaesthetic Services. April 2010. London RCA
16. Safeguarding children and Young People: Roles and competencies for healthcare staff. Intercollegiate document, third edition, March 2014. *Royal College of Paediatric and Child Health*

17. Getting the right start: National Service Framework for Children: Standard for Hospital Services -Surgery 4.34. 2004. *Department of Health*
18. Improving services for children in hospital. 2009. *Healthcare Commission*
19. Facing the Future: Standards for Paediatric Services. 2011. *Royal College for Paediatrics and Child Health*
20. The way forward: Strategic Clinical Networks. 2012. *NHS Commissioning Board*

7.4 Guide development group for appendicitis

A commissioning guide development group was established to review and advise on the content.

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7.5 Funding statement

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7.6 Conflict of interest statement

Individuals involved in the development and formal peer review of commissioning guides are asked to complete a conflict of interest declaration. It is noted that declaring a conflict of interest does not imply that the individual has been influenced by his or her secondary interest. It is intended to make interests (financial or otherwise) more transparent and to allow others to have knowledge of the interest.

The following interests were declared by group members: None noted

Appendix 1: The OPCS and ICD-10 codes used to collect data on management of right iliac fossa pain

4. Interventions and Code Sets

4.1. Open Appendicectomy

Primary OPCS:
H01: Emergency excision of appendix
H02: Other excision of appendix
H03: Other operations on appendix

Secondary OPCS: (will be included after any Primary OPSC)
None

Primary ICD-10:
R10: Abdominal and pelvic pain
K35: Acute appendicitis
K36: Other appendicitis
K37: Unspecified appendicitis
K38: Other diseases of appendix

4.2. Laparoscopic Appendicectomy

Primary OPCS:
H01: Emergency excision of appendix
H02: Other excision of appendix
H03: Other operations on appendix

Secondary OPCS: (will be included after any Primary OPSC)
Y75.1: Laparoscopically assisted approach to abdominal cavity
Y75.2: Laparoscopic approach to abdominal cavity NEC

Primary ICD-10:
R10: Abdominal and pelvic pain
K35: Acute appendicitis
K36: Other appendicitis
K37: Unspecified appendicitis
K38: Other diseases of appendix

4.4. Non Operative – Observation

Primary OPCS:

None

Secondary OPCS: (will be included after any Primary OPSC)

None

Primary ICD-10:

R10: Abdominal and pelvic pain