Quality Improvement: Impact of Implementation of Surgical Pathway for abdominal pain on initial assessment time, investigations done and eventual outcome

Hina Rizvi[1]*, Chui Yi Lai[2]*, Vijay Iyer[3], Anjum Gandhi[3], Justina Rweyemamu[3]

* Co-authors

1. Paediatric Registrar ST7, Birmingham Heartlands Hospital

2. Paediatric ST2, Birmingham Children's Hospital

3. Paediatric Consultant, Birmingham Heartlands Hospital

NHS University Hospitals Birmingham NHS Foundation Trust

Background

• Historically, in our District General Hospitals, paediatric patients with abdominal pain were seen acutely by surgical teams.

• Patients referred to surgeons with abdominal pain faced a long wait because:
- Surgeons were based at Surgical assessment unit/theatre/other wards
- Surgeons requested blood tests and imaging, and awaited results

• This delay affected Paediatric assessment unit (PAU) flow and ward capacity

• Initial data collected 2018. Abdominal pathway implemented July 2019

• All paediatric patients with abdominal pain were referred to the Paediatric team first for assessment, and only referred by paediatrician to surgeons if deemed appropriate. Follow-up data was collected in 2020.

Aims

To assess:

• time to first review by a team (paediatric vs surgical)
• percentage of patients
  • with abdominal pain referred to each team
  • who had blood tests and imaging requested by each team
  • discharged, observed, referred and admitted by each team

Methodology 2018 and 2020

• **Sample Period:** 4 weeks in 2018 vs 6 weeks in 2020
• **Criteria:** All referrals with abdominal pain to PAU
• **Relevant Sample Size:** 55 in 2018 vs 89 in 2020

• **Data Collection:** Retrospective review of:
- Hard copy notes: times of reviews, and referrals record
- Electronic patient management system: blood tests, imaging and discharge summaries

• **Validation:** Use of Pro-forma Exclusion
• **Criteria:** Patients who have had appendectomy or were re-attenders

Results

Referral source

Referral source	AUDIT 2020		AUDIT 2018	
ED	33	37.1%	29	53%
GP	42	47.1%	20	36%
WIC & BADGER	11	12.4%	6	11%
HOSP TFR	3	3.4%	0	0%
TOTAL	89	100%	55	100%

First review team

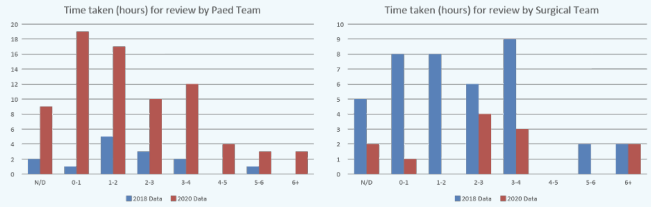
First review team	AUDIT 2020		AUDIT 2018	
Paediatrics	77	87%	14	26%
Surgical	12	13%	41	74%
TOTAL	89	100%	55	100%

Patient outcome on First team review

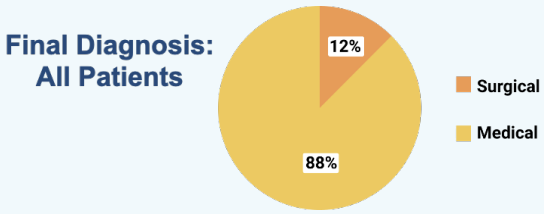
	Paediatrics Team		Surgical Team	
Audit	**2018**	**2020**	**2018**	**2020**
Discharged	64%	64%	35%	58.3%
Referred	7.1%	33.5%	30%	16.5%
Admitted	7.1%	2.5%	12.5%	0%
Theatre			20%	16.5%
Observed	21%	0%	2.5%	8.3%

Patient outcome on First team review

Time to first senior review



Results



Investigations

All bloods and imaging were requested by first reviewing team

	AUDIT 2020		AUDIT 2018	
	Paediatrics	Surgical	Paediatrics	Surgical
% of patients who have blood tests requested	17%	58%	43%	90%
% of patients who have imaging requested	5% *	17%	0%	33%

Summary

Re-auditing after implementing new Surgical abdominal pathway shows:

• Overall patient flow through PAU has improved as more patients are being discharged.

• Appropriate reduction in laboratory investigation 2018 vs 2020 (both by surgical team from 90% to 58% and Paediatric team from 43% to 17%)

• Optimisation of imaging resources by surgical team from 33% to 17%

• 88% of patients with abdominal pain had a medical diagnosis at discharge.

Conclusion

• Abdominal pain is a common presentation in the paediatric population, mostly benign and self-limiting.

• Abdominal pain should be assessed by general paediatricians first, and then referred to surgical colleagues if deemed appropriate to avoid unnecessary investigations and imaging.

• *This work has been presented in BSPGHAN 2021 virtual conference and published in Frontline Gastroenterology BMJ in April 2021 Volume 12 Supplement 1.*