

# 30-day Readmissions in Paediatric Surgery: The Brighton Experience

Willie-Henri Quah<sup>1</sup>, Saravanakumar Paramalingam<sup>2</sup>

<sup>1</sup>Brighton & Sussex Medical School, Brighton, UK

<sup>2</sup>Royal Alexandra Children's Hospital, Brighton, UK

## BACKGROUND

### 30-day readmission (ReAd)

- Refers to unscheduled presentation to hospital resulting in a stay, within 30 days of discharge
- Used by Care Quality Commission (CQC) and Clinical Commissioning Groups (CCGs) to evaluate surgical care, with regulatory and financial penalties to NHS trusts
- Takes up significant NHS resources
- Paucity of published data on 30-day ReAd within children's services in the United Kingdom (UK), including paediatric surgery

### AIMS

- To evaluate the service of a regional tertiary paediatric surgical centre
- To provide pertinent parameters for continued appraisal

The study period was the **12 months ending 31 March 2017**.

## METHODS

Data were extracted from the **Hospital Episode Statistics (HES)** and **Healthcare Evaluation Data (HED)** systems.

(Neonates were excluded)

Data recorded and analysed included:

- Primary admission diagnosis and treatment
- Dates of primary admission and discharge
- Readmission diagnosis and treatment
- Dates of readmission and discharge

The **length of stay (LOS)** of admissions and readmissions were calculated, as well as the **number of days from primary admission discharge to readmission**.

Demographic variables recorded: age, gender, ethnicity and social deprivation quintile.

ReAd were categorized into **elective or emergency** cohorts based on the nature of primary admission.

### Readmissions: Emergency and Elective cohorts

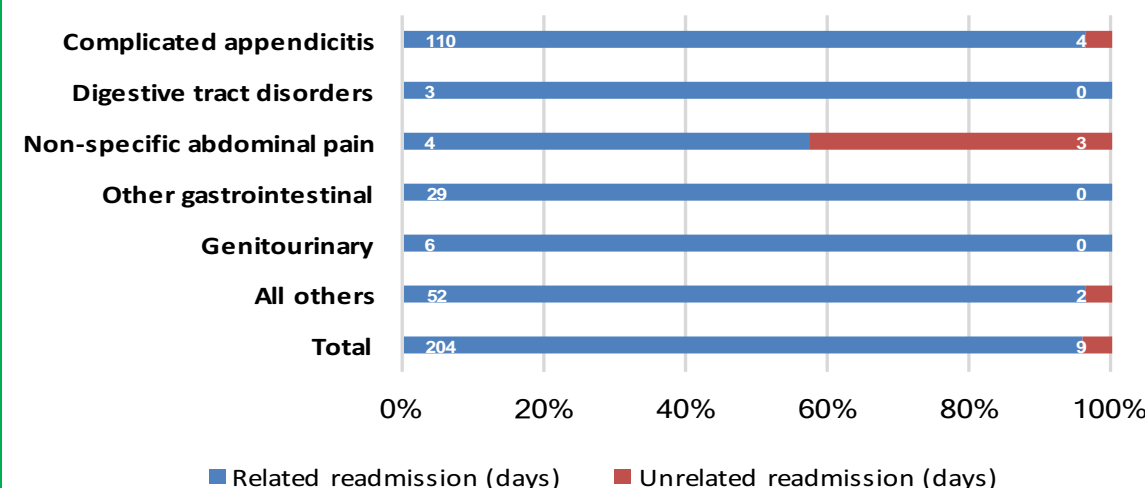
Cohorts	All cases	Readmissions	Readmission rate	Related readmissions	Related readmission rate
Emergency	670	98	14.6%	90	13.4%
Elective	993	3	0.3%	3	0.3%
<b>Total</b>	<b>1663</b>	<b>101</b>	<b>6.1%</b>	<b>93</b>	<b>5.6%</b>

Length of stay (days)	All related readmissions	Emergency	Elective
Mean [range]	2.2 [0,29]	2.0 [0,29]	6.7 [0,20]
Median	0	0	0
95% confidence interval	0.88	0.82	28.68
<b>Total</b>	<b>204</b>	<b>184</b>	<b>20</b>

### Readmissions by nature of primary admission

Nature of primary admission	Readmissions	%
Complicated appendicitis	23	22.8%
Digestive tract disorders	12	11.9%
Non-specific abdominal pain	8	7.9%
Other gastrointestinal	25	24.8%
Genitourinary	10	9.9%
All others	23	22.8%
<b>Total</b>	<b>101</b>	<b>100.0%</b>

### Readmissions days by nature of primary admission



## RESULTS

- Total of **101 ReAd**, **213 readmission days** by **89 patients**
- Readmission rate was 6.1%** on a total of 1663 paediatric surgery cases. Readmissions cases were mainly GI (67.3%), of which >1/3 were complicated appendicitis.
- Corrected readmission rate was 5.6%**. 8 of the 101 (7.9%) readmissions were unrelated to their primary admissions, corresponding to 9 of 213 days (4.2%). All 8 unrelated readmissions were GI cases.
- 53.5% of the primary admissions and 40.6% of the readmissions had surgical interventions.**
- Income** from paediatric surgery readmissions was **£147,130 – tariffs of £174,949**, less the **trust-wide penalty rate of 15.9% (£27,817)**.
- None of the non-specific abdominal pain cases had surgery and therapies administered (analgesia and laxatives) suggest **potential for community care.**
- Social deprivation** was associated with readmissions for non-specific abdominal pain and genitourinary cases, but the opposite is true for complicated appendicitis.

✓ First detailed study of 30-day ReAd at a UK regional tertiary paediatric surgical centre

✓ ReAd are heterogeneous and should not be the sole determinant of penalties

✓ Data granularity in this study provides better evaluation and its use can significantly affect trust incomes

## CONCLUSIONS

**(1) Emergency primary admissions are more likely to lead to readmissions**

**(2) Limited evidence that readmissions are avoidable**

**(3) Potential amelioration to triage, accelerated discharge procedures and community care**

**(4) Existing coding systems cannot distinguish “false” readmissions unrelated to previous discharge**