sinusitis presented to Temple Street Emergency Department in September 2018. We carried out a case series detailing their presentations, clinical courses and outcomes, and discussed the identification and management of complications of bacterial sinusitis.

Methods Three cases of complicated sinusitis from September 2018 were selected from the emergency department admissions record. Their medical records including lab results and imaging reports were reviewed and comparisons between the three cases were made.

Results The three cases, all male, were aged 14, 11 and 11. All three had had preceding symptoms of coryza, pyrexia and headache. One developed neck pain and vomiting and was initially thought to have meningitis. CT brain revealed left sided sinusitis with an extradural abscess. The other two patients were initially treated as orbital cellulitis. One was transferred from a peripheral hospital, where he had presented with eye swelling and pain, after he developed diplopia and frontal bone swelling. CT showed pansinusitis with a right sided frontal osteomyelitis and a subperiosteal collection in keeping with Pott's puffy tumour. The other presented with eye swelling and pain; CT showed pansinusitis with an extradural empyema. All three patients had markedly raised inflammatory markers on presentation. All required prolonged courses of IV antibiotics. All three had neurosurgery and ENT involvement, the cases of orbital cellulitis had daily ophthalmology reviews. Two had FESS procedures with drainage of their abscess.

Conclusion These three cases demonstrate the potential for bacterial sinusitis to cause serious complications. It is important for the clinician to bear these complications in mind when evaluating the child with rhinosinusitis and to consider imaging when there is a clinical suspicion. Speciality involvement is vital in the management of complicated sinusitis. There is a role for the development of a national clinical guideline pertaining to the management of bacterial sinusitis in the paediatric population.

P277 THE PREVALENCE OF BACTERIAL INFECTION IN RECENTLY VACCINATED FEBRILE INFANTS

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Background and aims Evidence is lacking regarding the best approach to evaluating recently vaccinated infants younger than 3 months who present to emergency department (ED) with fever. There have not been any recent published studies assessing the prevalence of bacterial infections in this population. The aim of the present study is to investigate the prevalence of bacterial infections in young infants presenting with fever within 72 hours after vaccination.

Methods We reviewed the electronic medical records of infants aged between 6–12 weeks who presented with a fever $>38^{\circ}\text{C}$ to paediatric ED, Tallaght University Hospital, Dublin, from January 2018 to December 2018. Febrile infants who recently vaccinated within 72 hours prior to ED presentation were compared with those who did not recently vaccinated. Bacterial infection was diagnosed based on culture results (urine or blood or CSF).

Results A total of 70 infants (age: 8.8 ± 1.9 weeks, male: 40 (57.1%)) were enrolled in this study. Among 70 infants, 19 (27.1%) had recently vaccinated, of whom 11 (57.9%) presented to ED within 24 hours of vaccination, 7 (36.8%) presented 24–48 hours after vaccination and 1 (5.3%) presented 48–72 hours after vaccination. The prevalence of bacterial infection in non-recently vaccinated infants was 17.6% compared to 10.5% in recently vaccinated infants. Interestingly, all vaccinated infants who had bacterial infections were presented to ED with fever within 24 hours of vaccination and all bacterial infections in this group were urinary tract infection (UTI).

Conclusion Fever should not be attributed only to the vaccinations in young Infants who present to paediatric ED with fever after recent vaccination. All febrile recently vaccinated infants should be carefully evaluated and at least urine testing should be done regardless of the time of vaccination after the presentation.

P278 IMPROVING THE QUALITY OF ACUTE AND INPATIENT MANAGEMENT OF PAEDIATRIC ANAPHYLAXIS THROUGH THE SIMULATION OF INTRAMUSCULAR ADRENALINE ADMINISTRATION

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Background The use of intramuscular adrenaline in the acute treatment of paediatric anaphylaxis is well-established and the effectiveness of adrenaline administration is time-dependent. The incidence of anaphylaxis presentations to paediatric emergency departments is increasing, as is the use of adrenaline autoinjectors in the pre-hospital setting. Cost and supply challenges have reduced UK inpatient adrenaline autoinjector usage without evidenced complication and this has resulted in alternative methods of intramuscular adrenaline administration in the acute setting.

Methods In this study we compare the time intervals between anaphylaxis diagnosis and IM adrenaline administration in a low-fidelity simulation of a biphasic type 1 hypersensitivity reaction, repeated across two UK paediatric centres. Time from diagnosis to administration were compared for existing adrenaline emergency kits and adrenaline autoinjectors placed in resuscitation trolleys, the method being alternated as a control for the second reaction phase. Performance was compared across locations stocking paediatric resuscitation equipment where paediatric anaphylaxis presentations were considered most likely. This included two paediatric emergency departments, two paediatric admission units, an allergy investigation unit, and a paediatric inpatient ward. Additional data was obtained on nursing staff satisfaction with these methods and their familiarity with the preparation of intramuscular adrenaline injections.

Results This study demonstrated significantly ($p < 0.05$, $n = 24$ trials) prolonged administration times using adrenaline emergency kits. Causes for this delay included time required to access controlled-drug storage units, time required to obtain injection equipment, and staff familiarity with the preparation of IM adrenaline syringes. In addition, autoinjector usage of adrenaline was universally favoured by clinical staff for use in the emergency setting.

Discussion We conclude that adrenaline autoinjectors offer a statistically faster method for intramuscular adrenaline administration in emergency department and acute settings for paediatric patients. This is likely to offer health benefits in a time-critical emergency but as a department policy must be balanced against potentially increased costs and the frequency of administration within drug expiry periods. Intramuscular adrenaline administration in the emergency setting raises signification human factor error risks and this was reflected in the staff favour for autoinjector administration devices.

P279 A RETROSPECTIVE REVIEW OF THE PAEDIATRIC ACUTE ABDOMINAL PAIN PATHWAY IN THE EMERGENCY DEPARTMENT

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Introduction Up to 10% of childhood emergency department (ED) presentations are for abdominal pain ¹. High quality treatment and efficient clinical pathways can be hard to achieve due to the broad differential diagnosis ². We therefore aimed to audit this pathway to identify areas for quality improvement.

Methods We retrospectively identified 139 children presenting to ED over a three month period triaged³ as having abdominal pain. We examined the pathway and outcome of all 40 children who required admission and a random sample of 40 non-admitted patients. We analysed their triage allocation, waiting times, number of consultations, final diagnosis and definitive management.

Results

Abstract P279 Table 1

Characteristic	Admitted	Non-Admitted
Triage category:		
2- Very urgent	8 (20%)	5 (12.5%)
3- Early assessment	28 (70%)	24 (60%)
4- Can wait	4 (10%)	9 (22.5%)
5- Non urgent	0	2 (5%)

The total time spent in the ED increased with multiple consults: for a single consult the mean time was 241 minutes, compared to 240 minutes for 2 consults, 346 minutes for 3 consults 346 minutes, and 417 minutes for 4 consults.

Of breached waiting time targets, 12 (30%) were caused by ED staff, 11(25%) by paediatrics, 18(45%) by surgeons, 9 (22.5%) by extended ED stay for investigations or observation, and 6(15%) by delay in transfer to ward.

21(52%) of patients were admitted under surgeons, however only 7 (17.5%) of these had a surgical problem requiring surgical intervention. Of the admitted patients there were 8 patients triaged as category 2 (very urgent) and 50% of these

required appendicectomy. No patients triaged 4 or 5 required surgery. No child <8 years required surgery.

Conclusion Most children presenting to the ED with abdominal pain did not have a surgical problem. Surgery was most likely in children triaged 2 and aged 8 years and above. Time spent in ED could be reduced by avoiding multiple consults. We have therefore proposed a new pathway for the initial consult: paediatric team see < 8 years; ED team see > 8 years triaged category 3–5; surgical team see >8 years triaged category 2. We aim to re-audit patient waiting times, management by appropriate speciality and outcome.

P280 PATIENT REFERRAL PATHWAYS IN ACCIDENT AND EMERGENCY DEPARTMENT OF AN IRISH HOSPITAL, AND ITS IMPACT ON PATIENT WAITING TIME

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Background Number of children attending the paediatric accident and emergency (A&E) department has seen an increase over the years. Paediatric A&E is primarily meant for accidents and emergencies. Paediatric patients (Excluding injuries and acutely unwell patients) are expected to be seen by general practitioner (GP) initially and get referred to A&E if needed. Recently the number of self referring patients has seen a mount resulting in overcrowding in A&E, which could drain out the resources including increase in waiting time.

Objectives To study patient referral pathways in Accident & Emergency(A&E) department and its impact on patient waiting time.

Methods All paediatric patients presenting to A&E from 9th March 2016 to 23rd March 2016 (excluding injury and review patients) were studied. Individual clinical notes were reviewed.

Result Out of total 820 patients, 241(29%) were studied after excluding trauma patients. Based on Paediatric Early Warning Score (PEWS) patients were divided into categories 1 to 4 with category 1 being the most unwell patients. The expected time to be seen by a doctor entails category 1 - immediately, category 2 within 10 minutes, category 3 within 1 hour and category 4 within 4 hours. Category 4 patients were considered to be non urgent referrals, expected to be managed at General Practitioner(GP). There were 140 (58%) self referrals outnumbering 90 (37%) GP and 11 (5%) orthopaedic referrals. Interestingly 156 (65%) patients were category 3 and 46 (19%) were category 4. All category 1 patients were seen immediately. Category 2 patients faced an average waiting time of 26 minutes; this was 83 minutes in category 3 and 65 minutes in category 4 patients.

Conclusion Increased number of self referring patients particularly category 4, increased the waiting time for sick patients (category 2 and 3).

Encouraging non-urgent patients to be seen by the GP initially may have a beneficial effect on state resources in terms of time, manpower, waiting time and finance. This needs patient education.