care; 2) To increase asthma screening from 0% to 80% by December 2020.

Methods We developed an algorithm for asthma screening in EHR based on national guidelines that asked about medications taken at home, exercise-induced symptoms, medication adherence, daytime and night-time symptoms, use of rescue medication and interference with activity in the past 4 weeks, and use of oral corticosteroids in the past year. Screening was conducted by the nursing staff prior to patient being seen by the provider. Based on responses to the screening questions, severity/control classification is calculated and displayed in EHR for provider to then treat patient accordingly. Classic Quality Improvement tools such as the Model for Improvement and Plan Do Study Act (PDSA) cycles were used to incorporate changes into daily workflow. Practice Advisory Board met monthly to discuss barriers to implementation and identify solutions. The Board made decisions on adopting successful strategies and brainstormed new strategies to address barriers.

Results This project is ongoing and preliminary results are available from 3 practices: small pediatric, large pediatric and family medicine practices. The ultimate goal is to improve care and clinical outcomes of children with asthma. To date, a total of 4,057 screenings have been completed at these sites. Screening rates improved from 0% to 78.6% in a small pediatric practice, from 0% to 66.7% in a large pediatric practice, and from 0% to 38.7% in a family practice. Several problems were encountered during the process of change: competition with other nurse-completed screenings; screening questions are available in English only within EHR; nursing staff shortages; nurses forgetting to conduct screening; and caregiver not knowing information about child's asthma or disagreeing with asthma diagnosis.

Conclusion We developed an asthma screening algorithm within EHR, trained nursing staff and implemented patient screening at the time of clinic visit allowing providers take action on asthma management based on the screening result. Further collaborative efforts are needed to improve and sustain screening rates with the ultimate goal of improving patient clinical outcomes.

GP155 ARE CLINICAL PREDICTION RULES IN PAEDIATRICS VALIDATED? A LITERATURE REVIEW

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Aims To identify and appraise the geographical and temporal transportability of externally validated clinical prediction rules (CPRs) in the paediatric population.

Methods A Medline search was conducted from 2000–2015 for publications involving the derivation, internal or external validation of a CPR in children aged 0–21 years. Validation studies were included if they described a CPR which was developed within this time frame.

Results 193 studies were identified for inclusion. The selected studies describe 133 CPRs, across more than 10 paediatric specialities. 63 CPRs were not validated (47%). Of the 70 validated rules identified (53%), 25 were internally validated, 8 were cross validated and 53 were externally validated. Only 13 CPRs (10%) were both internally and externally validated and 21 CPRs (19%) were externally validated more than

once. 15 internally validated studies used split sample methodology while only 5 performed bootstrapping regression methods. Of the 87 studies measuring external validity, the majority of studies (66%) were performed at a different site to the derivation. Only 5 studies were performed at the same site while 22 did not disclose this information. 43 externally validated studies included populations that were recruited in a different country to the derivation and 27 of those were on a different continent. Only two externally validated studies were shown not to have temporal transportability. Performance of the rules in validation was poorly reported, and if reported usually underperformed in comparison to the original.

Conclusion While many CPRs are developed, they are often not validated externally. Of those that have been validated, it is often difficult to uphold the same level of performance. The majority of externally validated CPRs assessed in this study meet geographical and temporal transportability which is a crucial feature in the CPR's ability to uphold performance amongst different populations.

GP156 INCREASING RATES OF SELF-HARM AMONG CHILDREN 10–14 IN IRELAND: A TEN-YEAR NATIONAL REGISTRY STUDY 2007–2016

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Despite stabilization in suicide rates in most countries, rates of Self Harm have continued to increase in young people. Research abounds as to the risks and protective factors but there is still a huge gap in our knowledge as to what leads one person to act on suicidal ideation and another to refrain, and what causes increasing numbers to engage in repetitive non-suicidal self-(NSSI).

The current study examined trends in rates and trends of self-harm among young people in Ireland aged 10–14 years over a ten-year period.

Methods Data from the National Self-Harm Registry Ireland on presentations to hospital emergency departments (EDs) following self-harm in 10–14 years-old during the period 2007–2016 were included. We calculated annual self-harm rates per 100,000 by age, sex and method of self-harm. Poisson Regression models were used to examine trends in rates.

Results The rate of self-harm was 72 per 100,000 (34 for males and 112 for females) an increase of 75% between 2007 and 2016 (IRR = 1.75, 95% CI = 1.15–2.10), higher in boys (82% versus 72%). Rates of attempted hanging and self-cutting more than doubled (IRR=2.43 and 2.72, respectively). Attendances to hospital with self-harm increased over the course of the day peaking at 11pm, and unexpectedly perhaps highest on Mondays.

Presentations involving self-poisoning were highest, and Paracetamol containing medication were involved in the majority of presentations (51%), 19% involved NSAIDs and 12% involved minor tranquilisers (22% for boys and 9%) for girls). 8% of presentations involved alcohol. Considering those discharged from the ED, the majority (57%) were referred to

CAMHS or other psychological services, however, one-quarter (24%) were discharged home without further follow-up, and 3% left before assessment.

Conclusion Over a ten-year period, rates of self-harm in all age groups (10–24) increased by 22%, but the largest increase was in youth aged under 10–14 (+82%). The increasing rates as well as increases in methods of self-harm associated with higher lethality underline the need for interventions to reduce risk of repeat self-harm and suicide among this population. Presentations to hospital provide an opportunity to provide appropriate referral and treatment options for those engaging in self-harm. Having access to child and adolescent psychiatry services in pediatric hospitals would allow appropriate consultation, but in the absence of such services, it is essential that pediatric staff are competent in providing a therapeutic assessment and aware of appropriate service to refer on to.

GP157 QUALITY, TRUSTWORTHINESS, READABILITY, AND ACCURACY OF MEDICAL INFORMATION REGARDING COMMON PEDIATRIC EMERGENCY MEDICINE-RELATED COMPLAINTS ON THE WEB

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Study Objectives To analyze the adequacy of information on the internet directed at parents regarding common acute pediatric complaints.

Methods Authors searched three internet search engines for four common acute pediatric complaints (child + fever, vomiting, cough, abdomen pain) assessing the first 20 results for each query. Website readability was evaluated using a composite of the Flesch-Kincaid Grade Level, Gunning Fog Scale, Simple Measure of Gobbledygook Score and Coleman-Liau Index. Quality and trustworthiness were independently assessed by two reviewers using JAMA Benchmark Criteria and National Library of Medicine (NLM) Trustworthy scores. Accuracy was independently assessed by two board-certified physicians (emergency medicine, pediatric emergency medicine) who analyzed text with website and author identifiers deleted. Accuracy was calculated by dividing the number of correct by the total number of correct and incorrect medical statements. Disagreements regarding physician accuracy were settled by a third physician.

Accuracy was defined as $\geq 95\%$ correct, readability as an 8th grade or lower reading level, high quality as ≥ 3 JAMA criteria, and trustworthiness as an NLM total score ≥ 3 with all sub-scores > 0 .

Features of accurate and inaccurate websites were compared using chi-square analysis for categorical data, and Mann-Whitney U for continuous and ordinal data. Association between website accuracy and search rank order was measured using Spearman's correlation coefficient. Inter-rater reliability of website accuracy, JAMA criteria and NLM scores was measured using Cohen's kappa (k).

Results Ninety-six websites that were duplicates or directed at health professionals were excluded, leaving 144 evaluable websites. Of these, 60 (42%) were readable, 49 (34%) were

certified as reliable by the Health on the Net (HON) Foundation, 38 (26%) had high quality JAMA criteria ($k = 0.68$), and 44 (31%) had reliable NLM trustworthy scores ($k = 0.66$). Physicians graded 87 websites (60%) as accurate ($k = 0.94$). Professional medical organizations (hospitals, academic societies, governments) more frequently published accurate websites compared to individuals and non-professional websites. (74% vs. 46%, $p < 0.01$). There was no correlation between accuracy and search rank order ($\rho = -0.05, -0.21$ to $0.12, 95\% \text{ CI}$). There was no association between accuracy and physician authorship, quality, trustworthiness, readability, article age or HON certification.

Conclusion Most studied websites had poor quality, readability, and trustworthiness. Many websites were also inaccurate. Because inadequate web-based information might adversely influence parents' medical decisions, measures should be taken to ensure information related to acute pediatric complaints is of high quality, readable, trustworthy, and accurate.

GP158 THE USE OF NITROUS OXIDE IN TEMPLE STREET EMERGENCY DEPARTMENT

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Background A visit to the Emergency Department (ED) can be stressful and frightening for children and their parents.¹ Children perceive many of the interventions performed in ED as threatening, and a negative experience can have an impact on any future visits to hospital.^{2; 3} Through our procedural sedation programme, we aim to minimise this distress, reduce pain and improve the success rate of a procedure whilst ensuring patient safety at all times.

Aims The aim of this study is to review the use of Nitrous Oxide for procedural sedation within the Emergency Department between March and October 2018, and to evaluate the adverse events and outcomes.

Methods When performing procedural sedation in ED, a standardised sedation record is completed by the trained staff member and uploaded to a computer database. These forms were reviewed and data was input into Microsoft Excel for interpretation and analysis.

Results Over the study period, procedural sedation was performed on 142 occasions. The mean age of the patients was 6.9 years old (11 months – 15 year), and 68% were male. The overall mean duration of sedation was 9.3minutes (3minutes – 40minutes). The most common indication for use of Nitrous Oxide was in the management of a fracture or laceration (93/142). Other indications included removal of foreign bodies, lumbar punctures and IV cannulation. No serious adverse events occurred in the study period. Less significant side effects occurred in 22% of cases. Vomiting was the most common (27/142) side effect and was more likely to occur in children under 10 years of age.

Conclusion Nitrous oxide is used for a wide variety of reasons in our department and is generally well tolerated. Procedural sedation can be beneficial to patients in reducing distress and avoiding a general anaesthetic with prolonged hospital stays. The implantation of a database allows for continuous audit of our practices within the department and comparison with national and international standards.