Aim This systematic review (SR) was undertaken to identify and summarise any factors which influence the implementation of paediatric clinical pharmacy service (CPS) from service users’ perspectives in hospital settings.

Method Literature search from EMBASE, MEDLINE, Web of Science (Core Collection), Cochrane Library, Scopus and CINAHL databases were performed in order to identify any relevant peer-reviewed quantitative and qualitative studies from inception until October 2019 by following the inclusion criteria. Boolean search operators were used which consisted of service, patient subgroup and attribute domains. Studies were screened independently and included studies were quality assessed using Mixed Methods Appraisal Tool (MMAT). The study was reported against the ‘Enhancing transparency in reporting the synthesis of qualitative research’ (ENTREQ) statement.

Results 4199 citations were screened by title and abstract and 6 of 32 full publications screened were included. There were 2 studies that were graded as ‘high’ in quality, with 4 graded as ‘moderate’. The analysis has led to the identification of 7 factors categorised in 5 pre-determined over-arching themes. These were: other healthcare professionals’ attitudes and acceptance; availability of clinical pharmacist on ward or outpatient settings; utilising drug-related knowledge to perform clinical activities; resources for service provision and coverage; involvement in a multidisciplinary team; training in the highly specialised areas; and development of communication skills.

Conclusion Evidence for paediatric CPS was sparse in comparison to a similar SR conducted in the adult population. An extensive knowledge gap within this area of practice has therefore been identified. Nevertheless, majority of the factors identified were viewed as facilitators which enabled a successful implementation of CPS in paediatrics. Further research is needed to identify more factors and exploration of these would be necessary to provide a strong foundation for strategic planning for paediatric CPS implementation and development.

REFERENCE

P09 MANAGEMENT OF AGGRESSIVE SYSTEMIC MASTOCYTOSIS IN A 4KG INFANT

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Background Aggressive systemic mastocytosis is a very rare life-threatening diagnosis whereby mast cells accumulate in internal tissues and organs. There are limited case reports of this condition, particularly in children, and is associated with poor prognosis.

Situation We present a case report of a child who was diagnosed as a neonate with cutaneous mastocytosis and subsequently developed massive hepatosplenomegaly, cytopenia and failure to thrive. Genetic testing was carried out, confirming somatic changes in the KIT proto-oncogene receptor tyrosine kinase, which controls important cellular processes. Her twin was unaffected. Treatment goal was to reduce disease burden and if clinically fit enough, to proceed with allogenic stem cell transplantation.

Contribution of the Pharmacy Team This case presented numerous pharmaceutical challenges. Drug reactions can be severe and life-threatening resulting in anaphylaxis. Therefore, management of paediatric systemic mastocytosis includes strict avoidance of triggers of histamine; including: drugs, infection, allergens and physical stimuli. The pharmacy team advised on the most appropriate analgesia, infection prophylaxis, anti-mediator therapy and mast-cell targeted treatment options.

First line therapy for adult patients with this condition is midostaurin. This is formulated as a 25mg capsule, which is the only licensed preparation. Due to the rarity of this condition in paediatrics, only case reports were available. Suggested initial dosing of 30mg/m² twice daily would provide a dose of 7.8mg twice daily in a 4kg infant. The manufacturer was contacted to request supply of an alternative formulation if available on a compassionate access basis to meet the clinical need.
to this patient. Initially the manufacturer was unable to support this request in a timely manner which led us to pursue second line therapy with cladribine.

Pharmacist advised on cladribine dosing based on chemotherapy protocols, liaised with procurement to source drug and facilitated set up of drug using electronic prescribing system, supported consultant to prescribe and nursing staff to administer drug.

Without the contribution of the pharmacy team, it is likely that this patient would not have received treatment in a timely manner and drugs may have been inadvertently prescribed and administered that could trigger histamine release.

**Outcome** Patient received three cycles of cladribine using doses described in LCH-IV protocol. Hepato-splenomegaly was reduced and counts normalised. There was no visible improvement of skin lesions. The manufacturer of midostaurin responded several weeks later granting the supply of a trial treatment of skin lesions. The manufacturer of midostaurin described in LCH-IV protocol. Hepato-splenomegaly was required. Consideration of most appropriate analgesia and infection prophylaxis was researched and prescribed for patient.

**Lessons Learnt** Medicines governance around compassionate stock liquid formulation on a compassionate basis.

**P10**

APP FOR PAEDIATRIC INFLAMMATORY BOWEL DISEASE (PIBD) PATIENTS – A SUCCESS?

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**Aim** To determine the impact of the introduction of the app IBDMate to the paediatric inflammatory bowel disease (PIBD) service on patient satisfaction, medication adherence and understanding.

**Method** The PIBD department and IBDbelief have developed an app - IBDMate for children with inflammatory bowel disease (IBD) and their guardians. The app aims to improve the health literacy and quality of life for patients. With IBDMate, the PIBD team can ‘prescribe’ educational courses from hundreds of videos, articles and quizzes featuring the PIBD team. Topics include living with IBD, medication, meet your team, and tests and research.

The project was ethically approved by the patient engagement team. A baseline measure of patient satisfaction with the PIBD service and understanding of medications was established prior to the app introduction using a paper-based questionnaire, distributed to patients after their hospital visit from 01/10/2020 - 31/12/2020. Following the introduction of the app, a second online questionnaire was distributed from 01/05/2021 - 30/06/2021.

The PIBD helpline was also reviewed for medication related enquiries during the study period. Data from patients/guardians who had not accessed the app before completing the second questionnaire were excluded. Patients were given a unique identifier and no personal information was collected. Descriptive and comparative statistical analysis was undertaken to assess impact.

**Results** The first and second questionnaires were completed by 33 and 31 patients respectively. Patient satisfaction with the quality and way information is received improved from 88% to 100%. Understanding of how medication works and side effects of medicines improved by almost 20%. After using IBDMate patients were able to remember 10% more information about their medicine and unintentional medication omission reduced from 10% to 0%. Responses to open questions revealed patients felt that the app helped them understand their medicines better and they found it useful to get to know the clinical team and hear other patients’ stories. Participants felt the app was a trusted, reliable and relevant source of information. Suggested improvements were having a section for younger children to engage with, and retention of login details. 55% used the app to look at information about their medication. The number of calls to the PIBD helpline that were related to medication dropped from 25% to 15% following introduction of the app.

**Conclusion** The introduction of IBDMate has had numerous positive impacts on patients through increased knowledge, accessibility, medication adherence and trust in information. This project demonstrates the benefits and further potential of the app although several areas would benefit from additional work including: monitor service satisfaction to ensure high standards are maintained as the app is developed; encourage broader use of the app; further research on the impact of the app on freeing up clinical resources by reduced helpline call volume and clinic visits; and further development of the app to include resources for younger children and retention of login details.

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**P11**

USING NOVEL TECHNOLOGY TO IMPROVE COMMUNICATION TO AND BETWEEN PHARMACY STAFF

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**Aim** To explore possible alternatives to the current radio-pager communication system following the department of health’s order for their removal by the end of 2021. To analyse the feasibility and practicality of these systems and implement the most appropriate choice into practice.

**Method** Analytical tools including driver diagrams and process maps were constructed and examined to identify possible alternatives to the current radio-pager system. Systems such as Microsoft Teams® and Whatsapp® were considered but were discredited due to concerns surrounding information governance. CareFlow, a system already implemented in the adult services at the Trust, was consistently identified as fulfilling criteria to enable its utilisation as an alternative to radio-pager. These criteria being: ease of use (task raising), accessibility and maintaining information governance standards.

The utilisation of radio-pager and CareFlow data were retrospectively collected and analysed for the 10-weeks before and after the implementation of CareFlow. Comparison of this data involved 2-sided T-tests and ANOVA statistical tests, comparing mean data of radio pager against CareFlow tasks, the comparison of workload and efficiency of the pharmacy teams after rollout. CareFlow tasks raised were analysed for time to completion as the accepted limit for radio-pager response is 15 minutes.

**Results** A statistically significant increase (P = 0.004) of 69.5% in the weekly average number of CareFlow tasks in the 10 weeks post-intervention (71) compared to the weekly average number of bleeps in the 10 weeks prior (42). Additionally, a statistically significant 45% decrease (P = 0.0002)