- **Forced function:** All paracetamol prescriptions for patients under 1 year of age were capped at 180 mg (change from 1000 mg). The prescriber could not enter a number greater than 180 mg.
- **Automation:** All oral paracetamol prescriptions were changed to automatically prescribe 15 mg/kg 6 hourly regardless of age (previously 2 different options requiring the prescriber to input dose and frequency according to formulary directions).
- **Standardisation/simplification:** All oral paracetamol prescriptions were rationalised to a single option with automatic dose and frequency as above (previously 2 different options unnecessarily).
- **Reminder/rule:** A rule of 'Consultant Approval' was added to all intravenous paracetamol prescriptions. The intention of this was for a review of the prescription before use to ensure appropriate use and dose/frequency. This could not be forced, so an education package was launched across the unit by the quality improvement group.

Prescription details were downloaded from the EP system for 3 month periods pre and post changes. The data was audited by pharmacy undergraduate students for prescribing accuracy.

Results The forced function, automation and standardisation options were implemented with 100% compliance. The 'consultant approval' rule was followed in 23% of cases. Consultant review led to a 58.6% reduction of IV paracetamol prescriptions on the unit and zero prescriptions for the first 2 months post implementation. The usage of oral paracetamol increased accordingly. This change corresponded to an overall reduction rate of 41.7% for intravenous paracetamol prescriptions.

Conclusions This project demonstrates how changes that increase automation within prescribing can reduce error and that implementation is more successful than education. A limitation of our data analysis was that we did not measure the effect on pain relief or pain scores in the patients who did not receive IV paracetamol compared to those who did.

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P16 CEASE: DEPRESCRIBING ON DISCHARGE FROM PICU

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Aim To develop a screening tool for prescribers to aid deprescribing on discharge from paediatric intensive care (PICU). Deprescribing is defined as 'the process of withdrawal of an inappropriate medication supervised by a healthcare professional with the goal of managing polypharmacy and improving outcomes'.¹ On the subject of deprescribing in paediatrics there is currently a lack of published literature however it is thought that we will be able to rationalise medicine use by being able to identify and document their indications.²

Method An audit was completed of twenty-five paediatric patients following discharge from PICU. Data was collected on which medicines were not appropriately stopped by PICU prescribers when patients were stepped down to the ward.

These medicines were categorised by their indication and this information was used to create a deprescribing screening tool. Prescribers on PICU were educated on this new tool and a further audit is currently underway to assess the impact of this.

Results Twenty-five children were discharged from PICU to wards within the hospital over a four week period. Of these all twenty-five had two medicines or more that should have been deprescribed or a plan documented for before stepping down. A total of 110 medicines could have been deprescribed (median 4 per patient, range 2–8). These medicines were categorised by their indication: sedation 38.2% (n=42), electrolytes 33.6% (n=37), additional charts 18.2% (n=20), gastro-protection 4.5% (n=5), antibiotics 2.7% (n=3), other 2.7% (n=3).

We found that these medicines included high risk critical care only medicines that were unsafe to be administered on a ward such as high strength potassium infusions or inotropes, oral and IV sedative agents and antibiotics with no documented plan. Based on this information the following 'CEASE' screening tool was created:

Charts - are additional charts still in use and appropriate?

Electrolytes - have all PICU only electrolytes been stopped?

Antibiotics - do all antibiotics have a documented plan?

Sedation - has all sedation been stopped or if not is there a documented plan of when and how to stop?

Enteral - if enteral feeds have started has all gastro-protection been stopped?

A further audit is currently underway to assess the impact of the 'CEASE' tool.

Conclusion The audit has shown that a range of different medicines were inappropriately continued outside of PICU, this includes high risk medicines not suitable for use on the ward. The development of the 'CEASE' tool has been created to aid prescribers in the identification of medicines which should be deprescribed. This should help to provide better treatment, improve patient safety and promote antimicrobial stewardship.

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P17 INTRODUCING CONCENTRATED PRETERM STOCK PARENTERAL NUTRITION AND THE IMPACT ON BESPOKE COMPOUNDING

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Background It is widely recommended that stock parenteral nutrition (PN) bags are used where possible to reduce the risks associated with bespoke PN compounding.¹ A review was undertaken within a level three neonatal unit which identified that a large proportion of compounded bags were made due to the need to provide full nutrition in a smaller volume. A preterm concentrated aqueous PN bag was developed which, when run with stock lipid syringes, meets the nutritional requirements of preterm babies in a total volume of 100 ml/kg/day.²

Aim The aim of this work is to evaluate the impact of the introduction of a preterm concentrated stock bag on the need for bespoke PN in preterm babies.

Method The new concentrated PN bag was transitioned into use from November 2017. Data regarding the number of preterm patients admitted and the type of PN they received was collected from January to October 2017, (Group A), this was then repeated for all preterm patients admitted from August 2018 to May 19, (Group B), after the preterm concentrated bag was fully introduced. Preterm babies were classified as babies that were born < 34 weeks gestation as the concentrated bag was formulated with these patients in mind.

Results Group A, (n=143), had 1045 bags supplied over the collection period. 47% of the PN bags supplied were bespoke PN bags, largely due to the need to provide PN in a smaller volume than the 130 ml/kg/day that the preterm stock bags available at that time. Group B, (n=118), had a total of 965 bags supplied, 16% of these bags were bespoke PN. The reasons behind requiring bespoke bags included the need for manganese free bags, requiring a reduction in glucose and a high electrolyte requirement in patients especially those with stomas. This has resulted in an overall reduction in spend on preterm PN of 34% and a reduction in compounded PN spend of 69%.

Conclusion This work has highlighted several benefits of introducing preterm concentrated PN bags. Firstly having concentrated preterm stock bags available on the ward has meant that a larger proportion of babies are maintained on stock PN without recourse to compounded PN. Secondly this has preserved the compounding capacity of our technical services unit so when a patient requires a bespoke bag that facility is available. Also, capacity for the compounding service has been preserved across the hospital minimising the need to outsource compounding. Finally the neonatal unit has seen a reduction in overall PN costs in this patient group. The introduction of this bag has been instrumental in reducing the need to outsource PN bags to commercial compounding units during periods of high demand, meeting national recommendations on the management of aseptic compounding capacity.³

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P18

PROVOCATION OF PAEDIATRIC HEARTS – A SAFE AND SMART SOLUTION

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Aims Provocation challenges are used to diagnose certain inherited life-threatening cardiac conditions; treatment can prevent malignant arrhythmias and sudden death. Provocation medications are administered to unmask pathognomic conduction characteristics on real-time electrocardiography. Pre-prepared rescue medications are administered should a ventricular arrhythmia be unintentionally provoked. These high-risk

medications, in line with safety agency recommendations, should be delivered using smart-pump technology.¹ They are also often unlicensed and expensive.² We investigated the utilisation of smart-pumps and development of a guideline to optimise medicines management and safety of these procedures in an Irish tertiary paediatric hospital.

Methods Published literature and current practices, including those in other paediatric and adult hospitals in Ireland and the UK, were reviewed to ascertain appropriate dosing and administration in the paediatric population.^{3 4} Multi-disciplinary input from nursing, cardiology, pharmacy and biomedical engineering was sought in guideline development.

Results Evidence for such challenges in paediatrics is sparse. Suitable dosing was agreed and an indication-specific smart-pump drug library created. The 'PCA Therapy' module was employed to deliver repeated weight-based doses of the provocation medication (Ajmaline) in a controlled and timely manner; the rescue medication (Isoprenaline) was programmed as a continuous infusion. An auxiliary calculator was developed in Microsoft Excel® to direct staff on preparation of both infusion solutions and bolus doses of medications to be manually administered (Magnesium and Isoprenaline). In 2017, relevant staff were trained, and the 'Ajmaline Challenge' guideline was approved and implemented in the Cardiac Catheterisation Laboratory (CCL) and Cardiac Day Unit. Estimated cost savings of €19,400 were realised between January 2017 - October 2018 due to reduced wastage of unused medications. Further savings are likely due to decreased utilisation of the CCL.

Conclusion Multi-disciplinary collaboration and health technology can improve the safety and cost-effectiveness of high-risk cardiac diagnostic procedures in the paediatric setting. Similar processes for other provocation challenges are under development.

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DIRECT OBSERVATIONAL STUDY OF INFUSION ERRORS ASSOCIATED WITH SMART-PUMP TECHNOLOGY IN PAEDIATRIC INTENSIVE CARE

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Aims Processes for delivery of high-risk infusions in paediatric intensive care units (PICUs) are complex. Standard concentration infusions (SCIs), smart-pumps and electronic prescribing are recommended medication error reduction strategies.^{1 2} Implementation rates are low in Irish and UK hospitals.^{2 3} Since 2012, the PICU of an Irish tertiary paediatric hospital