

# P1

## INTRODUCTION OF IMMEDIATELY AVAILABLE O D NEGATIVE BLOOD TO THE PAEDIATRIC CARDIAC CATHETER LABORATORY REDUCED VENEPUNCTURE AND BLOOD UNITS CROSSMATCHED

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### **Background**

Complications during paediatric cardiac catheterisation are rare. However, unexpected, life-threatening complications such as cardiac tamponade or pulmonary haemorrhage requiring urgent blood transfusion do occur.(1)

### **Problem**

This led to many children being crossmatched who never utilised the blood provided for them. Difficulty in venepuncture led to significant delays and cancellations. Severe needle phobia and distress is estimated at 2-4% in the general paediatric population.(2) Many of the paediatric cardiology population suffer from post-traumatic stress from previous procedures.(3)

### **Strategy for Change**

In October 2020, one unit of emergency O D negative blood was made available in the refrigerator next to the cardiac catheterisation laboratory. For safety, for all paediatric patients, this unit undergoes additional donor screening in-line with neonatal transfusion guidelines (K negative, iso-haemagglutinin negative, <10 days old, CMV sero-negative).(4) This 'safety net' allowed guidelines to be re-written to limit group and save and crossmatch requirements to higher-risk procedures (table 1).

The primary aim of this project was to ensure the new system was safe and correctly identified patients who required crossmatched blood to be available. Secondary aims were to compare the proportion of children requiring venepuncture and blood crossmatch under the old and new guidelines.

Hospital and transfusion laboratory records of all patients under 16 years of age who underwent interventional congenital cardiac catheterisation between 1st October 2020 and 31st September 2021 were reviewed.

### **Measure of Improvement**

154 interventional procedures were performed in 134 patients. 2 families had chosen NHS national data opt-out and were excluded. Median age was 4.55 years (range: 0-15.7 years). Median weight was 17.5kg (range: 2.03-90kg). 53% were male.

## **Safety**

Nine children were transfused within 24 hours of intervention. All had been classed as higher risk patients and were crossmatched. Four neonates required transfusion. Five children were PICU patients prior to the procedure. The emergency unit of O D negative blood was not used.

## **Compliance with new guidelines**

New guidelines were adhered to in 94% of cases.

Pre-procedure venepuncture and cross-match

76 (50%) of children had a group and save sample taken. If previous guidelines had been adhered to this figure would have been 108 (71%) of patients.

72 units of blood were crossmatched during the audit period. If previous guidelines had been adhered to 176 units of blood would have been crossmatched.

## **Lessons Learnt**

Introduction of 1 unit of immediately available O D negative blood safely allowed fewer children to undergo venepuncture. Time in both the transfusion laboratory and on the cardiology ward has been saved by fewer samples being processed and fewer blood units being crossmatched.

## **Message for Others**

Immediately available O D negative blood is safe and saves resources. This has the potential to be rolled out to other paediatric surgical services.

## **References**

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