

# Risk Assessment on the proposal to replace IV Heparinised Saline 10units/ml (HepS) to IV Normal Saline 0.9% (NS) for Peripheral Intravenous (IV) Cannulae in the Paediatric Patients in KKH

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## Introduction

Normal Saline 0.9% (NS) as the flush solution to maintain patency of intravenous (IV) cannulas in adult patient population has been well established in many studies. However, there are limited studies on this in paediatric patients. With the risks associated with heparin administration, a study was conducted to evaluate the safety and effectiveness of using NS instead of Heparinised Saline (HepS) in our paediatric population in KKH.

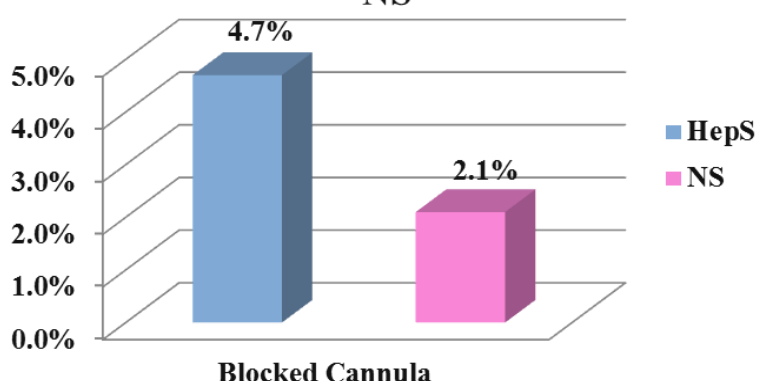
## Methods

Data from several piloted pediatric wards of different subspecialties were collected in two phases of 1 month duration each with an interval of 1 month for rolling out of the change. This included training sessions for the nurses. Data were collected when HepS was used as the flush solution for the IV cannula during the first phase. In the second phase, the flush solution was replaced with NS. During the training sessions, the nurses were reinforced on applying positive pressure at the end of each NS flush. A total of 320 IV cannulas were monitored for its patency when HepS was used whereas a total of 379 IV cannulas were monitored when NS was used as the flush solution instead.

## Results

Results revealed that there were minimal blockage and adverse effects from using NS as a flushing agent.

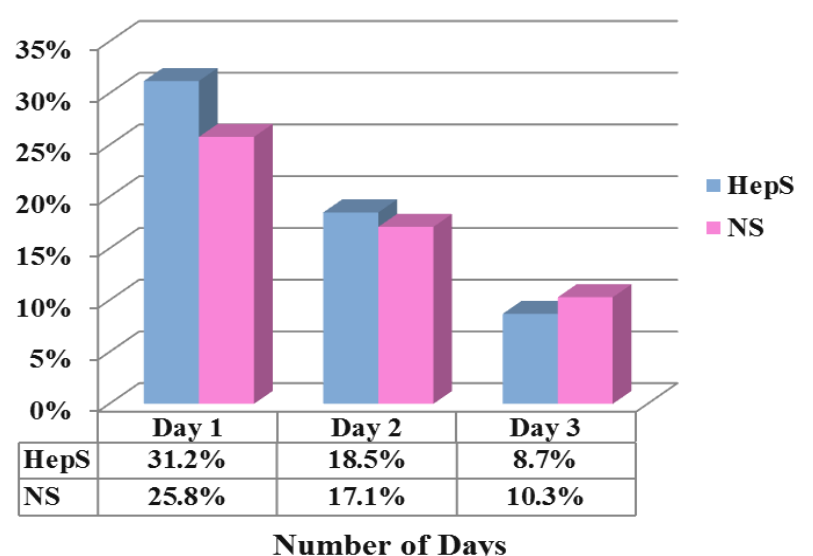
Comparison of Efficacy of HepS vs NS



There were a total of 15 IV cannulas that were found to be blocked when HepS was used in the first phase. This constituted 4.7% of 320 cannulas. However in the second phase, 8 out of 379 cannulas (2.1%) were blocked when NS was replaced as the flush solution. It was also discovered that there were more surviving IV cannulas that were flushed with NS as compared to HepS on the third day. This also implied that IV cannulas that were solely flushed with NS were able to last longer. This allows patient's treatment outcome to be optimised and reduce undesirable stress and undue pain.

Based on the favorable findings of the outcome study suggesting that IV NS flush is a safe alternative to IV HepS, the change of practice was then approved in April 2013. Wider dissemination of this change will be carried out for hospital wide implementation.

Survival Rate of IV Cannulas



## Conclusion

IV NS flush is a safe alternative in replacing IV HepS for pediatric patients with peripheral IV cannulas. With this change in nursing practice, patient's safety and hospitalisation stay is further enhanced.