

Promoting Safety of Peripheral Intravenous Medications in Children Care

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Introduction: The adverse drug reactions of peripheral intravenous medications for children may result in more extra medical costs and medical disputes. The purpose of this project was designed to improve the safety of children's peripheral intravenous medications, and reduce adverse drug reactions.

Methods: This study was a quasi-experimental design by using two-group posttest. The sample consisted of 4452 times of peripheral intravenous medications from medical record in pediatric ward at a medical center in central Taiwan. The project was launched from July 19, 2014 to Sep 22, 2014. The intervention included: 1. Develop an operating system and nursing system of drug delivery notification in Pediatrics, 2. Design the standard of process (SOP) of children's peripheral intravenous catheter, and 3. Training courses. The effectiveness of the project was evaluated by incidence of adverse reactions of children's intravenous drug and medical personnel's drug awareness after the intervention.

Results: The incidence rate of adverse drug reactions of peripheral intravenous medications for children was reduced from 0.025% to 0.5% ($p < .00$). The accuracy rate of knowledge and attitude of medicine use among nurses was increased from 64.8% to 96.7% ($p < .000$). And the accuracy rate of knowledge and attitude of medicine use among medical doctors was increased from 52% to 97% ($p < .000$).

Conclusions: The operating system and nursing system of drug delivery notification in Pediatrics improve the safety of Peripheral Intravenous Medications in children care. Using colors to remind acidosis and alkalosis medicine in the system would increase users' awareness in using high-alert medications. The SOP of peripheral intravenous catheter provides standard operating procedure, maintaining patient safety for children. The adjustments on systems and personnel training reduced adverse drug reactions and increased medication safety in a significant way.

Keywords: The medication system of pediatric ward, adverse effect of peripheral intravenous medications, pediatric medication safety.