



## Service Priorities and Programmes Electronic Presentations

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### **Infusion Pump Safety Enhancement Workshop in Rehabilitation Hospital**

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#### **Introduction**

Infusion pumps are extensively used in worldwide health care organizations for delivery of therapeutic fluids and drugs. Various types of infusion pumps are available for use in hospitals, day centers, out-patient departments, and even nursing homes. As different types and model of pumps have different safety features, they pose challenges to the less experienced nurses. Incidents involving improper use of infusion pumps are not uncommon, measures are required to prevent or minimize recurring of such incidents. With the aim to ensure fresh graduates competency in proper and safe handling of infusion pumps in clinical areas, a mandatory training programme, including a series of lectures and simulated skill-based training with problem solving training workshops, was organized and put in place.

#### **Objectives**

- To ensure fresh graduates are familiar with all models of infusion pumps used in TWEH
- To enhance nurses competency on the use of infusion pumps in clinical settings
- To standardize and promote safe practices of infusion pump handling
- To ensure correct drug infusion calculation and infusion rate set-up to prevent related medication incidents

#### **Methodology**

A series of simulated skill-based medication safety training workshops with emphasis on safe handling of different brands and model of infusion pumps used in TWEH were conducted from 4Q 2014 to 1Q 2016. In the training workshops, all fresh staff including new recruits and nursing graduates were required to undergo a series of training covering all functions of infusion pumps; compatible consumables and accessories such as infusion sets, syringe size; problem shooting; proper procedures of cleansing and decontamination; battery charging, and services maintenance. Trainees were required to return-demonstrate skills on the standardized safe practices of infusion pump handling with hands-on practices for each model of infusion pumps. They were asked to answer some drug calculation questions prior to

receiving problem-solving training. They were then required to resolve various problem scenarios for drug calculation and different problems involving triggering the infusion pump alarm system within a reasonable time. Staff competency and compliance on the return-demonstration skills were assessed by using the standardized staff assessment checklist. Problem-solving techniques, timing and accuracy rate of the drug calculation were counted. Staff satisfaction survey questionnaire was used to collect feedback. Quick user guides and cue-cards were provided to enhance their problem-solving skills and techniques when the infusion pump alert system is activated. Besides, a colourful "Practical Tips for Drug Infusion Safety" poster was designed and posted in all clinical areas for staff alertness. Related training information with hands on practice video was uploaded onto relevant website for staff easy reference.

### **Result**

A total of 42 nursing staff from all clinical units attended the two training workshops held in 2014/15 and 2015/16. All staff demonstrated full compliance on the return-demonstration skills and the problem-solving techniques. Over 95% of staff received full mark on the medication calculation with infusion rate set-up. All participants expressed "agree" or "strongly agree" that the enhancement workshop had increased their confidence in handling different infusion pumps in their working areas. Conclusions: The training scheme was successful in strengthening nurses' knowledge and skills, and their competency in handling infusion pumps in their daily work. It surely enhanced safe practices on administration of medication involving use of infusion pump and helped prevent occurrence of related medication incidents.