

Abstract

Medication error in hospitals is a significant problem worldwide. These errors inflict the most damage on the most vulnerable cohorts of patients, critically ill paediatric patients in an intensive care unit are in a high risk category. Hospitals and device manufacturers are developing closed loop medication systems in an attempt to reduce this problem. The combination of medical devices and ICT into complex distributed Medical IT Systems is another facet of the solution. The intent behind these innovations is to better manage patient data and to configure devices into networked systems that as a whole provide more functionality and safety than the individual devices can do when they are used in standalone mode. A Complete Closed Loop Infusion Medication System (CCLIMS) is a good example of this combined technology that is being utilised in the battle against medication errors. Systems of this type are much needed in the stressful environment of a paediatric intensive care unit (PICU).

Advances in infusion pump technology and the associated prescribing, labelling and electronic charting systems can (if implemented correctly) help to prevent medication errors. One noticeable gap in the information reviewed relates to identification of those work practices and information flow changes that an organisation should consider in order to successfully implement a system as complex as a CCLIMS. An implementation strategy should take account of all the affected departments and different disciplines that combine together to provide a medication service to the PICU. Another consideration is that the installation of a CCLIMS will need to completely integrate with the existing systems which are functioning already and in clinical use within the PICU.

From the work completed, the results that arose from this study and the knowledge gained on the detailed workings of a CCLIMS, it would be safe to say that many factors associated with stakeholder uptake and acceptance of a CCLIMS are addressed. The integration of a complex, multifaceted system such as a CCLIMS into a busy, stressful working environment would typically come up against significant resistance. It was noted that many barriers were broken down by simply utilising the correct approach to educating the stakeholder and introducing this technology in a correct and controlled manner.