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Preventing medication errors during the administration of intravenous infusions by increasing the use of 'smart' pumps and drug libraries within a healthcare network

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Background: Errors during the administration of intravenous medications can cause significant morbidity and mortality. Smart pumps with drug libraries reduce the risk of such errors.

Aim: Decrease harm by preventing errors during the administration of intravenous infusions.

Methods: Factors preventing the use of the drug libraries were identified and addressed using several “plan, do, study, act” cycles. Each improvement initiative was first piloted in one center. Successful interventions were implemented throughout the healthcare network. Drug library usage was monitored (monthly, quarterly, and annually) using the manufacturer's software.

Results: Compliance with the use of the drug libraries steadily increased from 48% in January 2017 to 98.5% in August 2022 throughout the healthcare network (Figure 1). Standardization of the drug libraries was completed in March 2019. The trajectory of the improvement in each hospital is shown in (Figure 2). Riyadh improved from 60% in January 2017 to 97% in August 2022. Jeddah improved from 68% in January 2017 to 90% in August 2022. Dammam improved from 65% in January 2017 to 97% in August 2022. Medina improved from 25% in January 2017 to 97% in August 2022. Alhasa improved from 84% in January 2017 to 99% in August 2022.

Conclusion: Medication errors are associated with significant morbidity and mortality. Prevention of these errors has significant benefits for patients, healthcare professionals and healthcare systems. The use of standardized drug libraries will assure and improve the quality of patient care.

Biography

Amjed Abu Alburak has completed his master program in Health Profession Education-College of Medicine with Maastricht University-Netherlands. He has over 25 years of experience in major critical specialty areas such as ER, Cardiac Surgical Intensive Care Unit, CCU, medical education, quality management, hospital accreditation and Medication Safety. He has published 2 abstracts and 2 research papers. He is currently certified as Patient Safety Officer, USA/American Institute for Health Care Quality. He is a Hospital Nursing Surveyor with Saudi Central Board for Accreditation (CBAHI). Currently, He is working as Nurse Specialist in King Abdulaziz Medical City-Ministry of Ministry National Guard Health Affairs-Riyadh.

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