

Pumping up Safety: Implementation of a National Drug Library

Ella Raguz, National Clinical Educator – Ramsay Pharmacy

Jameson Fawns, National CHARM Systems Manager – Ramsay Pharmacy



Background & Objective

Errors in intravenous (IV) medicine administration can result in significant patient harm.¹ In Australia, approximately 69.7% of IV medicine administrations contain at least one clinical error, with IV rate being the most common.² Implementation of smart infusion pumps can significantly reduce IV administration errors.² However, this is contingent on strong clinician compliance with the dose error reduction software (DERS) or “drug library”.²

In 2019, Ramsay Health Care committed to rolling out over 5,000 Baxter EvoIQ smart infusion pumps for 52 hospital facilities.

The objective was to create a centralised drug library that would fit a national model, standardise safe drug administration practices and encourage clinician compliance.

Action (Method)

The establishment and implementation of the ‘national drug library’ was pharmacy led. Initially, nursing leads from major hospitals within the Ramsay Health Care network were engaged, along with the National Clinical Governance Unit.

Once the initial drug library model was created, there was an extensive review period to identify differences in local drug administration policies in comparison to the drug library. Concurrently, technical infrastructure was constructed to accommodate real-time drug library updates and compliance monitoring via a WiFi Gateway. A framework was also developed to accommodate change requests and drug library reviews.

Onsite and virtual education was conducted at each site by pharmacy and Baxter trainers prior to final implementation.

Evaluation

A national drug library, containing more than 650 individual drugs and 7 care areas, was successfully established, and implemented across 52 Ramsay Health Care facilities in 2021.

Compliance to the DERS is currently >85% for >800,000 infusions which is monitored via a Wi-Fi gateway.

The gateway also provides extensive data on hard-limit pullbacks and soft-limit overrides for incident tracking (see figure 1) This information is used to regularly review the DERS to maintain its efficacy.



Figure 1: Example of an ‘Infusion Story’ to track incidents

National Drug Library Compliance as of October 2022

15%

DERS Basic

85%

Discussion

Balancing safe drug administration practices and drug library compliance is critical to gaining safety benefits from smart pumps.

Pharmacists are best placed to establish and maintain smart pump DERS and lead widespread practice change, not only in clinical practice but also in policies and procedures.

Although the original brief was met, future steps involve the national standardisation of drug administration policies and ongoing review of the drug library to uphold contemporary practice and promote clinician compliance.



References:

1. Australian Injectable Drugs Handbook Eighth Edition
2. Westbrook JI, Rob MI, Woods A, Parry D. Errors in the administration of intravenous medications in hospital and the role of correct procedures and nurse experience. *BMJ Qual Saf.* 2011 Dec;20(12):1027-34. doi: 10.1136/bmjqs-2011-000089. Epub 2011 Jun 20. PMID: 21690248; PMCID: PMC3228265.