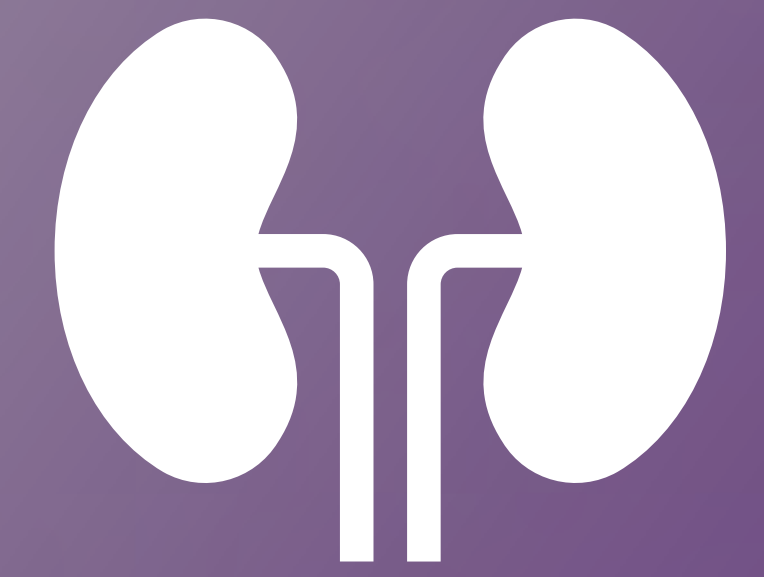


# Making more with less: use of a virtual product inventory in the Dialysis Unit



Rebecca Livori\* 1, Renee Dimond 1, Adam Livori 1,2

1. Pharmacy Department, Grampians Health Ballarat 2. Centre for Medicine Use and Safety, Monash University Parkville

\* contact: Bec.Livori@gh.org.au

## Background

The Grampians Health Ballarat Dialysis Unit has capacity for 60 onsite haemodialysis patients, requiring a significant stock of enoxaparin, iron polymaltose and iron sucrose. Storing this stock for individual patients in the medication room required approximately 0.3 m<sup>3</sup>, exceeding the available space.

## Objective

To develop and implement a Virtual Product Inventory (VPI) to reduce the required stock on hand, reducing physical storage space and risk of selection error with these high-risk medications, while maintaining PBS utilisation.

## Evaluation

The VPI was audited over a **three-week run-in period** prior to full implementation, to ensure accuracy.

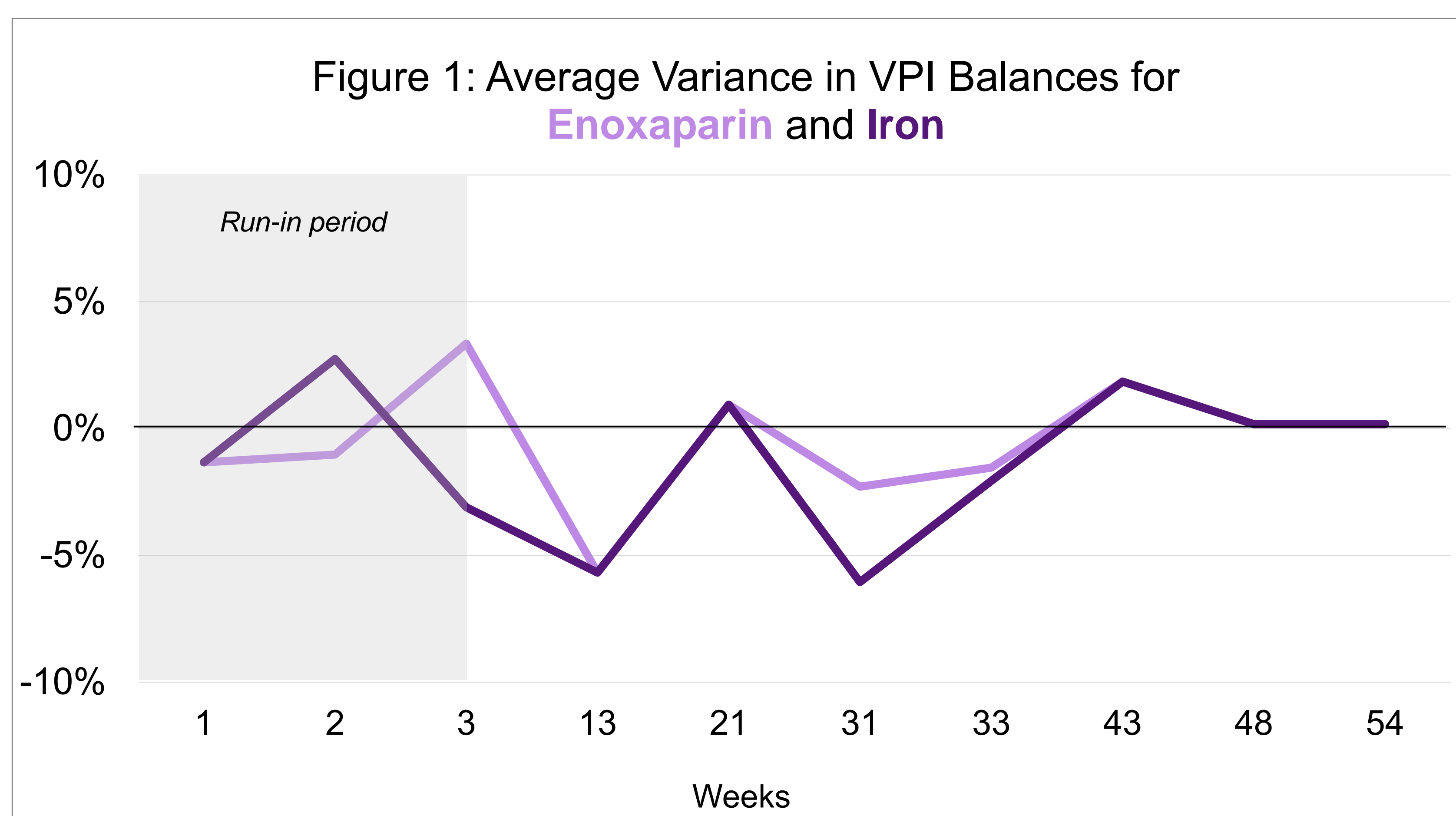
- An **average variance of - 2%** was seen between the actual and virtual balances in the initial audit, attributed to incorrect use of PBS stock for home training patients instead of imprest. Staff education was conducted to ensure stock was accessed correctly, and the VPI was implemented.

Monthly auditing is conducted to monitor accuracy, as shown in **Figure 1**.

Over 12 months of implementation,

- The **average variance for enoxaparin was - 0.53%**
- The **average variance for iron was - 0.70%** (polymaltose and sucrose)

These variances were largely attributed to dose changes not reflected immediately in the VPI and incorrect use of the stock for external patients treated in the Dialysis Unit. Balances are periodically corrected with imprest stock, which should be accessed for these patients.



## Discussion

Implementation of the VPI has been effective, accurate and widely supported by the nursing team.

Feedback included **increased efficiency** and ease in preparing medications, and **improved safety** as stock is selected on strength rather than patient name. It's now impossible for a patient to run out of stock in their "drawer", removing the risk of delayed doses due to stock availability.

The storage space required is less than half compared to pre-intervention: 0.14 m<sup>3</sup> versus 0.3 m<sup>3</sup>.

## Action

1. A database was set up in Microsoft Excel.
2. All **dispense events are recorded** in the VPI, adding stock to individual balances.
3. Stock is **stored by medication type and strength**, reducing the total storage space to 0.14 m<sup>3</sup>.
  - Stock is not labelled for individual patients, reducing workload in the pharmacy.
4. Nursing staff access the enoxaparin, iron polymaltose and iron sucrose **similar to an imprest system** and follow **double-check processes** for these high-risk medications.
5. The **medication cost is minimised** as dispense events are processed through the Pharmaceutical Benefits Scheme (PBS).
6. The pharmacist can monitor stock levels from the Dialysis Pharmacist Service Dashboard, ensuring stock levels are maintained.



Figure 2. QR code to an image of the Dialysis Pharmacist Service Dashboard, showing the VPI in context.