



Scan for Safety UNIVERSITY HOSPITAL WALES (UHW), CATHETER LAB CASE STUDY

In June 2021 the Minister for Health and Social Services approved a full business case presented by NWSSP and associated investment as the first steps to embedding Scan for Safety principles and practices across Wales. With patient safety at the heart of the programme, data standards and data capture technology are being introduced across NHS Wales. Automating the linkage of uniquely identified products, places and people, will not only assist in the prevention of patient harm with real-time data at the point of care, but it will provide instant traceability of implanted medical devices should a patient recall be required. This is also how Wales can comply with the Medicines and Medical Devices Act 2023.

Late 2021 a contract was awarded to Omnicell for an Inventory Management Solution (SupplyX) which will utilise these standards and handheld scanning technology to underpin the above benefits. Inventory optimisation benefits are integral to SupplyX, at the same time making ordering and replenishment far less labour intensive and returning clinical time back to patient care. R2 Consultancy were contracted by Cardiff And Vale (CAV) as Subject Matter Expert (SME) of Scan for Safety to help CAV with its solution design and implementation.

CAV UHW catheter labs team were first to go-live with Scan for Safety Cardiff and Vale Health Board in November 2023.

The solution has moved stock management from being a paper based, manually intensive process to one that is data based. SupplyX gives real time visibility of stock and where it is located across catheter lab areas and automatically re-orders inventory (via Oracle) once an item reaches the agreed reorder level (ROL) set by the service area. Most importantly, by scanning a patient wristband and scanning the barcode of an implant a digital link is captured between the patient, the product and its lot and serial numbers.

Scan for Safety brings a new way of working for service teams and NWSSP and can deliver significant benefit for safety, quality, productivity and efficiency.

Why Change?

Prior to implementation

Product Ordering

Product ordering was manual requiring significant clinical and administration time to order and locate products.

Inventory Levels

Inventory levels were not visible by product or area making it difficult to understand what stock was where across the labs and their storage areas, this led to over ordering and over stocking.

Recording

Recording of product waste was manual and time consuming, whilst the service did not benefit from clear information on how much waste there was (i.e. paid for but unused products).

Clinical time

If products were recalled by a supplier, it would take hours of clinical time to locate the necessary item(s) on the shelves and to then remove them.

Product Recall

If recalled products had been used on a patient, establishing which patients had received a recalled product(s) could only be confirmed through maintaining and searching through separate (and predominantly paper-based) records. Often taking hours or even days of clinical time on a time sensitive patient related matter.

Before Implementation



Project Formation

A CAV catheter lab project team was created comprising leads from: Clinical, materials management, Omnicell, NWSSP Supply Chain, Digital, Procurement and Finance. CAV Director of Digital Transformation and CAV Assistant Director of Finance were nominated joint Senior Responsible Owners (SROs).

- Scanning handsets were procured and configured
- Additional Wi-Fi router was added to a lab to strengthen Wi-Fi signal for handsets
- A feed of patient data including name, NHS Number, Hospital Number and D.O.B. was created
- SupplyX (the inventory management system - IMS) was updated with the necessary products and target stock levels that had been agreed with the catheter lab material management and clinical team.
- An interface was created between SupplyX and Oracle to allow for automated ordering.

Working with procurement and suppliers catalogue coverage for inventory items has increased from 70% to over 98%. This enabled a far higher rate of automated ordering, meaning that staff could rely on SupplyX to place the necessary orders on suppliers rather than spending their scarce time manually calculating and placing orders in Oracle themselves.

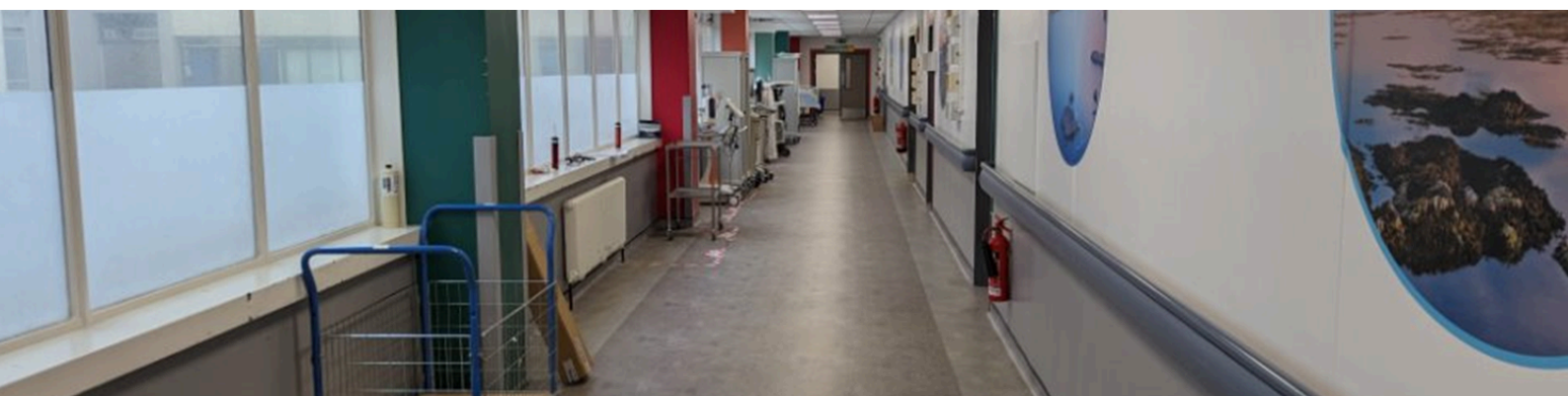
Old racking was removed, and new racking installed to optimise the main stores space making it easier to locate and manage essential stock items.

Training was given to users across the catheter lab materials and clinical teams including how to use the scanners for inventory management and for digital linkage of product to patient.

Final data testing and stock count was completed before go-live so that the inventory management system had an accurate starting stock position which included quantity of stock on hand, location, value and very importantly tracked items had a digital record of their lot/serial numbers and any expiration dates.

This gave an accurate baseline of what catheter labs stock levels needed to be for each item versus the current quantity on hand. Furthermore, the shelf life of products was captured which contributes to less waste and is both a financial efficiency and improves clinical safety assurance.

After Implementation



Benefits



Safety Improvement:

- Digital linkage of product and patient now means recalls can take minutes rather than days.
- Previously items were held outside of storerooms and overflowed onto corridors causing a potential fire safety risk. Stores are now organised, space being used efficiently with labelled shelves where items can be easily located.
- Now notes/records are kept and backed up electronically where previously they were paper and risked being misplaced or lost.



Patient experience:

- Less cluttered clinical areas, providing a more pleasant environment.
- Fewer cancelled procedures due to stock unavailability.



Quality Improvement:

- Provides compliance with the Medicines and Medical Devices Act 2023.
- Users can capture product lot, serial and expiry data on scanning and access automated reporting e.g. products due to expire by store location.
- Global standardisation of barcodes for products.
- Clinical space released by more effective stock control.
- Using the software to identify stock level discrepancies and investigate high value differences.



Staff experience:

- Product recall benefit – potential to reduce staff time spent from 3 days to 5 minutes.
- Clinical staff can now allocate less time to stock control and more conducting their day-to-day clinical tasks.
- System provides a useful suite of reports that can be used to help inform and structure clinical planning.
- Item waste reasons can be recorded on handsets to inform practice and decision making.
- Team can now digitally capture a full list of implants and consumables used on the patient.
- Time-consuming yearly stock checks can now be avoided provided system data and stock levels are regularly audited.
- Time saved by the materials team, not having to manually place orders or review stock to see what needs ordering. Also eradicating the potential risk of not manually ordering required items as they are not told about them or the used product sticker not provided.



CO2 Saving:

- Less waste of products going into landfill as overall reduction of waste products.
- Optimal ordering – Less unessential deliveries, or retuning of stock.



Financial Benefits:

Although the principle benefit is one of patient safety the enhanced inventory management capability has delivered significant stock related benefits for example:

- Item waste reduction expected to be >£175k per annum.
- Reducing target stock levels >£100k.
- Cost avoidance on additional TAVI valve related purchases >£600k.

Lessons Learnt

- There were very few records prior to implementation of what stock was kept where and agreed target quantities, this meant more time needed to be spent during pre-implementation on cataloguing stock, agreeing locations and target stock levels that did not exist before.
- There was extensive use of consignment stock but agreements with suppliers were either out of date, inaccurate or very informal. This meant agreements had to be reconfirmed and validated so that the inventory management system was updated to hold the contracted amounts.
- Staff availability for training was a challenge but with flexibility and an easy-to-use system all staff were trained and proficient in under 2 hrs.
- Staff needed to agree target stock levels but given the pressures of the job it was difficult to have them available for the time required in one or two sittings. Instead, time with them was short periods and spread out over time. Whilst less efficient, the project team needed to accommodate clinical pressures. Inevitably this meant training took longer overall.
- Once items are catalogued and allocated to specific spaces across the stores and digitally within the inventory management system, it is essential to follow the new Standard Operating Procedure's (SOPs) to avoid scenarios where items get moved to different locations or new items are added resulting in additional implementation time as stores and data need to be re-set.
- Items that need to be managed that aren't on an Oracle catalogue can mean that ordering is not fully automated but working with procurement in advance of implementation meant that all necessary items were placed on catalogue.

Process mapping is vital. You never automate until the AS-IS and TO-BE are signed off, this ensures:

- Existing process failures are addressed
- Good practice that needs to be retained is identified
- Interface requirements are identified or alternative arrangements developed.
- A more efficient design is put in place
- TO-BE process managed by appropriate staff groups
Clinicians then allowed to focus on clinical work
- Anticipated benefits and metrics agreed in advance



Summary

The project team is grateful to catheter labs colleagues for helping to implement this project and develop lessons learned.

Catheter labs was a very complex area for a first implementation and a separate Lessons Learned log has been created which is informing future implementations.

Senior management commitment from the area in question is vital in shaping the design, supporting the implementation tasks and ensuring key staff are made available for the time required.

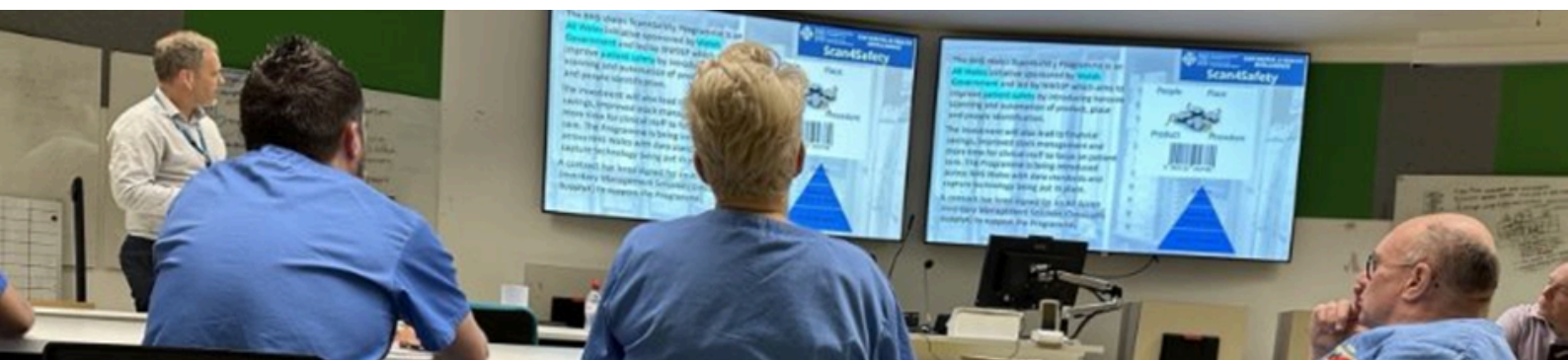
Inconsistencies in the product management data e.g. target stock levels can lead to under or over ordering which is what an inventory management system is designed to avoid. Good data preparation before implementation facilitates smoother go-live.

Ensuring that clinical teams scan products to patient post go-live does require some monitoring, failure to scan tracked items means the quantity on hand within the inventory management system is inaccurate but more importantly there will be no digital link of product to patient. It can take time for clinical users to get into the habit of scanning items but once they realise the benefits it becomes second nature.

It should be highlighted that the continued use of SupplyX post implementation is not without ongoing challenges that the local and national teams continue to work through.

For example teams locally and nationally are focusing their efforts on:

- Data driven ordering requires clean and accurate data to avoid under and overordering
- Simplifying of workflows and design where it is deemed over complicated
- Improving data flows and interfacing between SupplyX and Oracle
- Post go live staff training



Post go-live by following new ways of working and agreed SOPs the service can continue to assure the benefits of Scan for Safety by:

- Accurately booking stock in and out
- Regular cycle counting to ensure stock levels against which the system orders are accurate
- Perform the necessary top-up orders so that essential supplies are ordered on time
- Ensuring stock is only managed within the inventory management system means there should be no need to place separate orders via Oracle

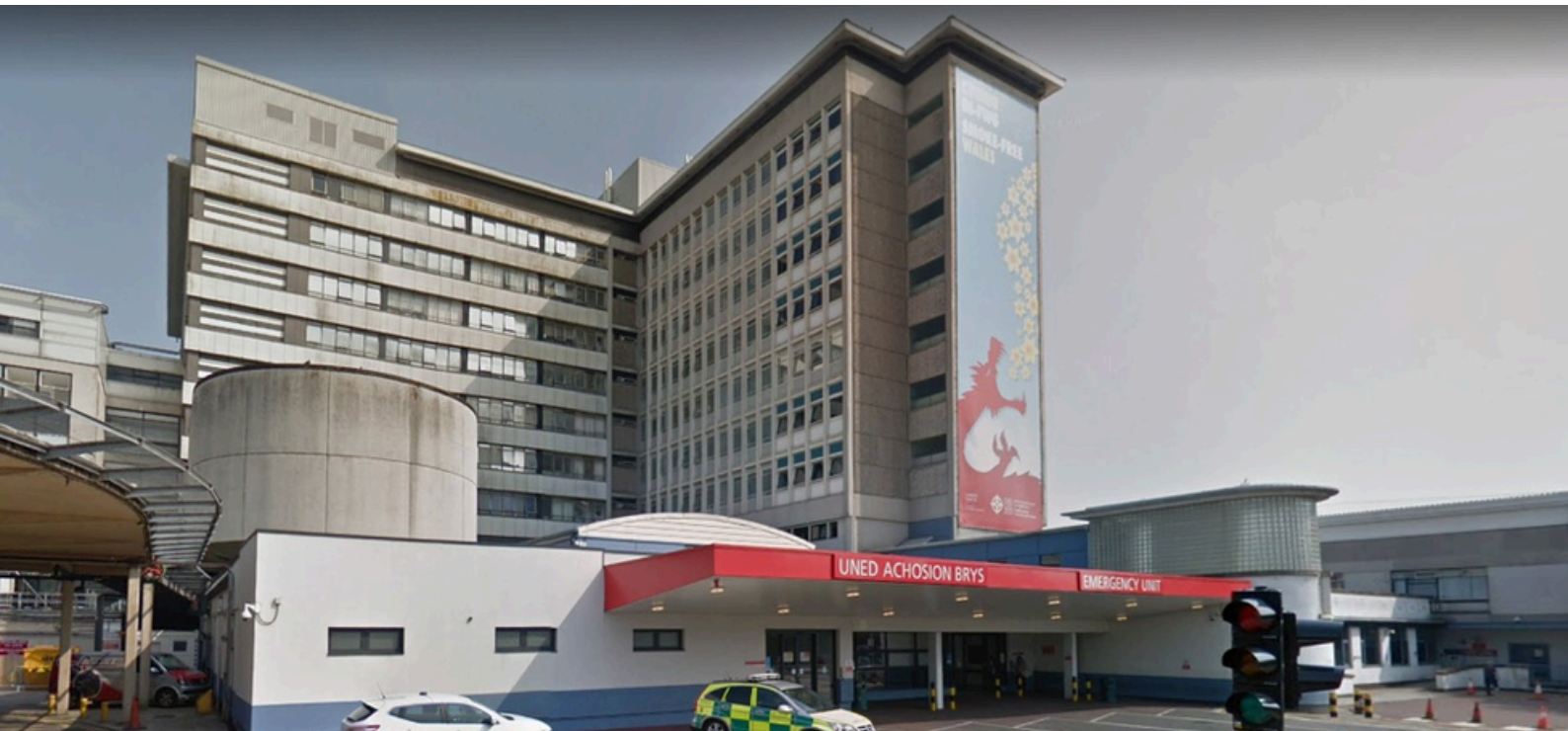
Managers and materials management teams now have inventory usage and other key information available to enable them to take a data informed view on further improvements they may want to take, facilitated by accurate stock management information.

There are multiple reports available including patient level costing reports, stock optimisation reports and many more.



1. Health board function developed professionally supporting satellite areas

2. Detailed knowledge of products supports better purchasing and the development of rationalisation plans



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