



Medicines optimisation and increased clinical efficiency

Sandwell and West Birmingham Hospital NHS Trust, UK

Lord Carter's final publication on Operational Productivity and Performance in English NHS Acute Hospitals, strongly urges NHS Trusts to consider automation as part of their agenda. Recent developments in hospital workflows suggest that automation can help reduce medication errors and improve the quality of patient care, while compensating for staffing shortages¹. In order to procure such benefits a Trust must be certain they have selected the right partner to meet the ever-changing demands on services, a move towards 7 day working, and increasing legislation.

Through working with BD and the implementation of BD Pyxis™ MedStation™ ES, Sandwell and West Birmingham Hospital (SWBH) were able to renovate their medication management structure at ward level, and adopt a modernised and safe workflow with the ability to reach NHS efficiency goals. Access to relevant, timely and accurate data has enabled the Trust to measure success, with their prime achievement being the release of additional clinical hours and financial savings. Further clinical efficiency is driven from aligning with GS1 standards, providing full transparency, traceability and stock efficiency across the Trust with BD automation and analytical tools.



Facts and figures

- 17 BD Pyxis™ Medstations™ ES, with bespoke configuration across 14 hospital areas
- Interfaced to JAC pharmacy system
- Refill re-order time reduced by over 75%¹
- Over 52 hours of pharmacy time per week released from infrastructure or back-office to clinical services¹
- Over 84 hours of nursing time per month released back to patient care activities¹



Key Challenges

SWBH faces consequences for overstressing nurse roles to stock checking, counting, re-ordering, ad-hoc telephone ordering and decanting of medications into multiple areas of storage². The continuous administrative burden, plus the crisis of nursing impacted the time dedicated to patient centric care and presented early signs of inefficient processes.

Through the Care Quality Commissioning (CQC) inspection it was identified that SWBH Trust is Outstanding in their provision of Care, however their approach to medication management was falling short of Safe, Effective and Responsiveness goals. A further investigation suggested insufficient number of qualified nurses on ward, for example one qualified nurse is routinely on duty for 20 patients². While 'nursing aims' were documented (for example, assessing blood sugars and pain management), care plans were incomplete leading to discrepancies during handover shifts, impacting clinical decisions and compromising the delivery of patient care.

Inconsistency in medication storage presented risk of staff not being able to access drugs in an emergency, lack of security for high risk drugs, plus increasing staff exposure to hazardous materials, and absences of data capture. To quantify the impact, the Trust was losing £70k per year in unclaimed rebate on medications and the money was simply written off¹ due to improper information capture. Additional costs were being incurred due to inefficient storage space, surplus stock, manual stock activities and poor medicines tracking and waste management¹. These challenges prompted management to introduce automated solutions to record, track and record processes and revise their way of working.



"We noticed a significant and immediate reduction in errors and missed doses whilst completing our drugs rounds in less than an hour. Not having to load medicines into cupboards has saved at least 30 mins each time releasing this time to patient care."¹

Steve Horton
Pharmacy Department, Sandwell & West Birmingham Hospitals NHS Trust.

Key Solution

In 2015, the Trust started the implementation of what is now 17 BD Pyxis MedStations ES, with BD Pyxis™ CUBIE™ Pocket and Matrix drawers allowing the Trust total flexibility in the safe and secure storage of medication based on access and security requirements. Furthermore, the unique BD Pyxis CUBIE drawers of the BD Pyxis MedStation ES enables SWBH the flexibility to modify the configuration of each drawer without vendor intervention providing a future proofed solution ready for the move to the Midland Metropolitan Hospital.

The scope of this project was paramount in helping SWBH achieve their legislative requirements from the CQC, as they continuously improve the breadth of safety measures. A key feature being the investment in the Scan4Safety principles which enables real-time monitoring of treatment delivery, helps manage the utilisation of products and dramatically improves how SWBH deliver care.

Furthermore, having full visibility of medicines across the Trust and immediate access on ward, means that nurses can locate the 'right medication' and reduce time to first dose significantly, as confirmed by Terry Byrne, Ward Manager at City Hospital.

BD automation has brought SWBH closer to achieving the Falsified Medicines Directive (FMD), and sets them in the right direction for reducing unwarranted variation and meeting Lord Carter recommendations. Just like SWBH, wider NHS trusts can promise to deliver the right medication, to the right patient, in the right dose, using the right route, at the right time, using the BD Pyxis MedStation ES.

1. Operational productivity and performance in English NHS hospital: Unwarranted variation. Lord Carter of Coles report, 2016. 2. Care Quality Commissioning, Sandwell and West Birmingham Hospitals NHS Trust, Inpatient services Report, Oct. 2014. 3. Sandwell and West Birmingham Hospitals, Internal analysis pre and post automation, 2017, Steve Horton, Senior Pharmacist, Birmingham, United Kingdom. 4. Sandwell and West Birmingham Hospitals, Internal analysis, 2017, with Sue Jones, Medicines and Supplies Ward Stock Coordinator, Birmingham, United Kingdom. 5. Sandwell and West Birmingham Hospitals, Internal feedback 2017, Terry Byrne, Ward Manager, Birmingham United Kingdom