

Supporting a quality pharmaceutical service in Life Healthcare through dispensing system enhancements

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CONTEXT

The Life Healthcare (LHC) hospital pharmacy dispensing system was targeted for decommissioning in July 2013. This provided the opportunity to re-evaluate our current processes with a view to incorporating quality improvements and efficiencies. The LHC pharmacy function at centre worked closely with a business analyst and developer from our IT department, and pharmacists in our hospitals, to create a state of the art dispensing system solution tailored for our business and focused on our patients.

PROBLEM

Although adequate from a legal, professional, and patient care perspective, there was little system support for growing clinical and quality improvement business strategies to improve patient safety and proactively manage risk. It was envisaged that operational and professional enhancements in our system would facilitate improvement in critical areas of:

- the dispensing process
- medication incident management
- clinical ward based pharmacy
- antimicrobial stewardship

Challenges and lessons learned

The solution was to include system supported allergy and drug/condition interaction dispensing prompts for pharmacists to decrease risk. The outsourced solution available proved to be difficult to incorporate and was delayed due to the complexity of integrating software from a small external provider with a more sophisticated system. Functionality enhancements were also required to customise the solution for the hospital setting.

Configurations to scanners and patient labels had to be done during roll out to optimize functionality. Some Supplier discussions have been necessary to improve readability of product barcodes.

As with most projects it was a challenge to remain within budget and timelines, whilst ensuring that all scope requirements were met.

REFERENCES:

Focus on Safe Medication Practices – MJ Rantucci, C Stewart and I Stewart, 2009
LHC incident and alert reporting statistics, 2010-2013
Dispensing time motion studies, LHC group

INTERVENTIONS

Extensive input was required from our pharmacy team at Centre during each development iteration cycle where we were involved in both design and validation testing of the solution. Final user acceptance testing was critical to the success of the system, and our role was pivotal in this process, developing test cases and facilitating the test workshops with our pharmacists in the business.

The following system enhancements support our Company's objective of enhancing patient centricity, patient safety and improving business efficiencies:

1 The utilization of scanners...

to save time, improve accuracy and reduce incident risk. Patient labels on the medication chart include bar coding so that when a pharmacist dispenses a prescription they scan the barcode and immediately access the correct electronic patient file. Most medications used have barcodes on packaging, making it possible for pharmacists to also scan the product onto the electronic patient file and limit medication "picking" errors and incorrect capturing of the product name, product strength or product dosage form onto the system.

2 Development of an allergy verification screen...

to alert professional staff of medication allergies while dispensing medication to the selected patient. Nursing and pharmacy have the ability to record and update patient specific medication alerts and allergies onto the patient's profile. The system will block the user from confirming the transaction unless the dispenser has acknowledged the allergy recorded.

3 Development of a system solution for the evaluation and capture of prescriptions from wards...

reducing the time the prescription is out of the ward (especially ICU), improving doctor satisfaction and patient care by limiting transcribing errors, multiple prescription charts and unavailability of prescription charts for doctor and medication administration rounds.

4 Inclusion of the capturing of "days supplied" whilst dispensing...

for accurate reporting on the utilisation of antimicrobials to support our Antimicrobial Stewardship Programme.

5 Inclusion of mandatory capturing of "batch number" and "expiry date" whilst dispensing...

to facilitate an effective **product recall** process. The "product recall" report displays all dispensing events to patients for the specific recalled product with the captured batch number and expiry date.

6 Automated processing of a compounding register...

after dispensing a compound to reduce the administrative burden on professional staff. Compounding "recipes" can be loaded onto the system for quick referencing. This not only speeds up the dispensing process for compounds, but also enables the pharmacist to print out a copy of the compounding record at the end of the transaction in line with legislative requirements.

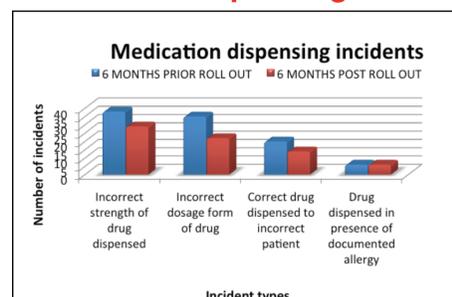
7 Development of a "to-follow" dashboard...

to ensure availability of medication for administration to patients. The pharmacist has the ability to differentiate between medicines that are available for immediate issue and a "to follow" that will be billed and issued to the patient when the stock arrives.

MEASUREMENT OF IMPROVEMENT AND RESULTS

Initial quantitative improvements related partly to the scanning feature which limits risk of selection of the incorrect patient and the incorrect medication during dispensing. It also reduced processing time during dispensing, improving prescription turnaround time.

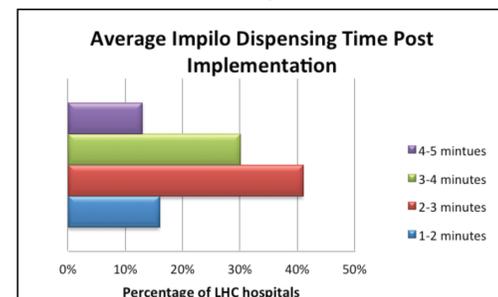
Medication dispensing incidents



The medication dispensing incident rate reduced by **11.54%** after system roll out, and the dispensing alerts reduced by **12.49%**.

There has been no change in the incidents involving allergies but we have seen improved results in the other incident categories.

Impilo dispensing time



Pharmacies had an average dispensing time of **5 minutes** per prescription prior to roll out of the new dispensing system.

The graph demonstrates the improvement on average dispensing time per prescription, with 57% of our pharmacies achieving an average below **3 minutes**.