

2D Barcode Scanner

Evaluation Report

March 2018

Evaluation of 2D Barcode Scanners in Community Pharmacy

Background

In September 2012 a questionnaire was sent to all community pharmacies (CPs) in Northern Ireland to assess the perceived advantages and disadvantages of 2D barcode scanners in the dispensing process and to collate any suggested improvements. The questionnaire gathered information on the number of CPs who had scanners and the percentage who were using them and also information on efficiency and patient safety issues. The majority of respondents to this questionnaire indicated that 2D barcode scanners improved dispensing efficiency and patient safety. However, the questionnaire revealed a number of issues that CPs had with the use of scanners, mostly in relation to the lack of use of DM&D codes. It was proposed that the introduction of scanners that utilised the DM&D codes would improve both efficiency and patient safety.

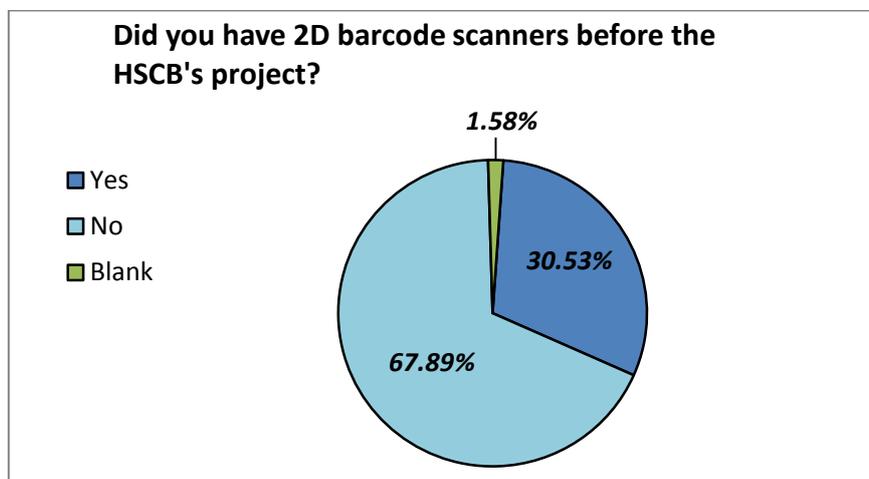
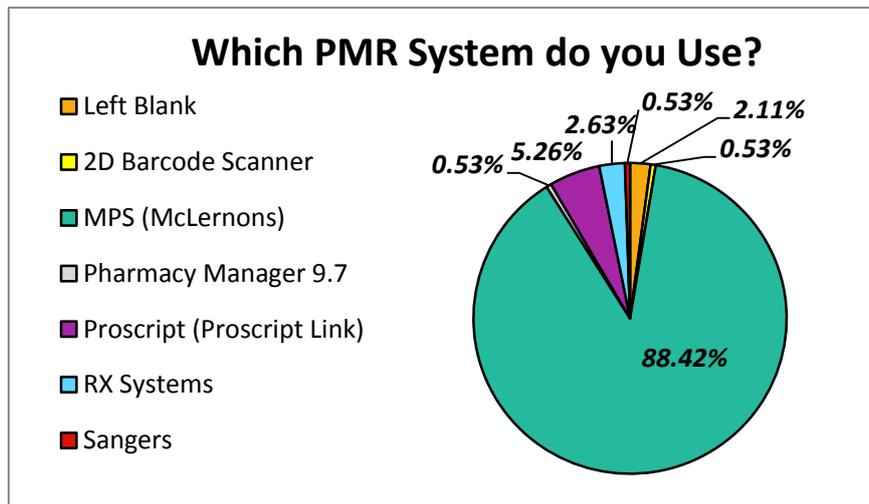
Taking this into account in May 2015 the HSCB undertook a project to implement 2D barcode scanners that would utilise DM&D codes into CP. In total approximately 700 2D barcode scanners were introduced into CPs in Northern Ireland at a cost of approximately £800k.

In June 2016, six months post implementation of 2D barcode scanners, a questionnaire was sent to all CPs in Northern Ireland. The aim of the questionnaire was to assess the use of 2D barcode scanners in terms of:

- Improving efficiency in the dispensing process in community pharmacies and,
- Improving patient safety by reduction of prescribing and dispensing errors. It is acknowledged that this is not an ideal method of evaluation as there may be incidents occurring that may not be detected but it was agreed to take into account the community pharmacists perception of improved safety.

Outcome Evaluation

A total of 190 responses were received. Out of these 84% of respondents used the McLernon Computers Pharmacy System. The remainder was made up of the smaller system suppliers. 68% of respondents reported not having used 2D barcode scanners prior to implementation.



Of the 68% of respondents who did not have a 2D barcode scanner before the project, 31% confirmed that they now routinely used their scanner during the dispensing process.

While this is lower than we would have anticipated, 78% of prescriptions were being processed using the 2D barcode scanners between 76-100% of the time.

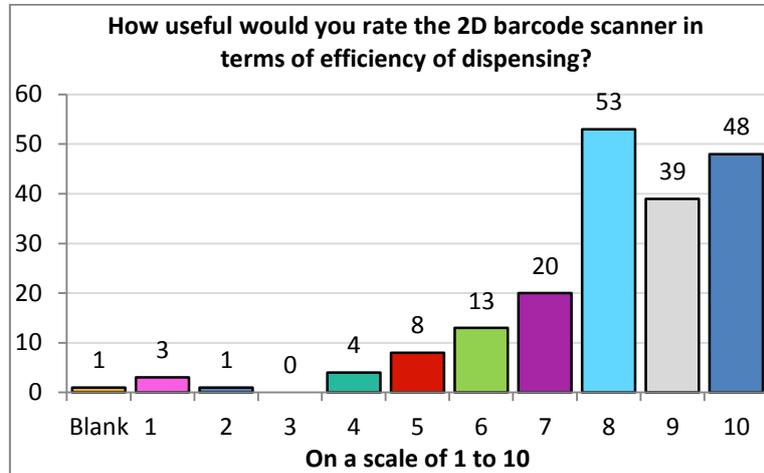
Reasons for not using the handheld scanners include:-

- Directions and instructions not read correctly – leading to errors
- It slows down the dispensing process, as a lot of information still needs inputting.
- Handwritten prescriptions.
- Used as much as possible. Not used when barcode won't scan.
- Doctor sings over barcode or if the printer in the surgery is low in ink.
- Habit.
- Don't use for repeat dispensing or weekly scripts.

Note – the majority of respondents did not give a reason as to why they did not use the scanner in the dispensing process.

Improved Efficiency:

In terms of improved efficiency approximately 86% of respondents felt that the use of 2D barcode scanners improved efficiency and rated this as above 5* in the efficiency rating.



***Rated 1 to 10 (1 slows dispensing to 10 speeds up dispensing).**

The respondents were asked how they felt the scanner improved or reduced dispensing efficiency. Answers included:

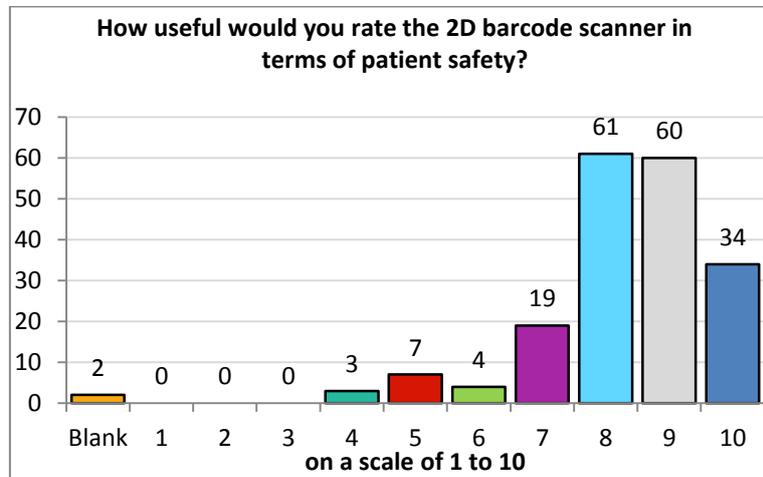
- It generally improves efficiency, especially when GPs enter precise directions, meaning no amendments are required when scanned.
- Much more accurate at adding patient details, address, age etc
- Ensures RX is added to correct patients PMR – reduces labelling errors.
- Patient details are automatically selected and filled to PMR and drug details entered without human intervention.
- Allows us to establish what was dispensed vs what was ordered.
- Improves efficiency as it quickly transfers what's on the prescription to the patient's PMR and onwards onto their labels.

Problems identified included:

- Has problems when two people have the same name.
- Information from the prescription usually requires manual input.
- Scanner doesn't always work due to poor quality large 2D barcodes produced by GP systems.
- Poor alignment of barcodes. Means it is partly printed on tear-off part.

Patient Safety

In terms of patient safety 97% of respondents believed that the use of 2D barcode scanners resulted in fewer errors.



***Rated 1 to 10 (1 more errors to 10 fewer errors)**

Reasons for improved efficiency given were:

- With multiple patients having the same or similar names, it is great to ensure that the script goes onto the correct PMR.
- Improves patient safety because dispensing error is reduced.
- More accurate spelling and product selection.
- Scanner improves patient safety eg script for generics links to actual product.
- Allows us to see what was dispenses vs what was ordered.

Problems identified included:

- It means PMR can't be viewed as easily as previously which means going in and out of patients.
- Can sometimes retain previous patient and therefore next script will go on these forms.

A final question on how to improve the use of the scanners was asked.

Answers included:

- Ensure that GPs understand the importance of the barcode and that they ensure their printer toners are replaced in a timely fashion to ensure the barcode is printed correctly.
- Software needs to flag patient history ie last time a drug was dispensed, change of dose etc.
- Barcode on prescription being positioned away from the edge of the prescription and legible for processing by scanner.

Conclusion

In conclusion, from the questionnaires returned, it has been identified that one of the main reasons for not routinely using 2D barcode scanners in the dispensing process relates to the alignment and poor quality of barcodes coming from GP. In order to help elevate these issues correspondence is currently being developed outlining good practice and the importance of placing the 2D barcode in a suitable position.

Secondly, the timing of the initial questionnaire, 6 months post implementation, also needs to be taken into account. Those CPs that never used 2D barcode scanners may have lacked confidence in the use of the scanners in the early stages of implementation and may have needed to build up confidence and their internal processes around the use of the scanners.

Therefore, a repeat questionnaire to ascertain if the use of barcode scanners has improved over time is being developed. This will identify if CPs have gained confidence in the use of this technology as they have had a chance to implement and embed this technology into their dispensing process.