



Case study

Royal Bolton Hospital

Royal Bolton Hospital discovers how Radio Frequency Identification can make it easier to track medical records, prevent them from going missing and release staff time.

After studying the current process, it is anticipated that:

- The time spent looking for misfiles will be reduced by 80% (£38,300 p.a.)
- The average time taken to locate a missing file will be reduced by 92%. (£20,500 p.a.)
- By decreasing the time to find misfiles and missing files, lost revenue due to coding time-outs will be decreased by 64% (£230,000 p.a.).

Background

Royal Bolton Hospital is part of the Royal Bolton Hospital Trust, which serves a population of around 263,000. The hospital has 622 inpatient beds and employs around 5,300 staff. The Royal Bolton is one of the busiest hospitals in north-west England for emergency admissions.

The medical records department within the hospital manages almost 450,000 records in a main library facility with an off-site location for older records. The Royal Bolton has been investigating how RFID can be used to improve the efficiency of the medical records department and the management of files in order to drive cost and operational benefits. At the request of the Department of Health, GS1 UK carried out an independent review in order to identify the areas within the current management system that would benefit from RFID technology and determine what these benefits are. Intellident, a leading supplier of RFID enabled solutions, supported the development phase of the project in identifying the potential benefit areas for further analysis. Following on from Intellident, Acumentive are conducting a trial in the hospital to test and validate the projected benefits.

Medical records management at Royal Bolton

In common with other large NHS hospitals, the flow of medical records in the Royal Bolton can be complex as patients move between wards and clinics and several people handle a record. The hospital operates two permanent storage facilities, one on-site and one off-site, but due to the nature of medical records processes it also has a large number of temporary storage areas including wards, secretaries' offices and clinics.

Key issues

The current manual tracking process creates several opportunities for records to "go missing" (the physical location no longer matches the system location). GS1 UK's review found that:

- Records are passed between areas and in emergency situations or at times of high pressure on resources, the movement happens without the event being tracked on the system, which creates confusion as to their current location and wastes staff's time
- When files have moved without the event being recorded, knowledge of the workings of the hospital is required to locate files in many cases – a great challenge for new staff

- Manual processes create opportunities for files to be placed in the wrong location
- With the number of files and their compactness, there is a risk that thin files can be placed in larger files or that they can be missed when looking for the record
- Non medical records staff, without the necessary training, have controlled access the files to insert letters etc, which increases the possibility of files being misplaced and not being tracked properly
- When files are outside of the medical records department their management varies considerably – often there is limited or no system for tracking files.

0.14% of requested records were found to be “missing” in the last year and the work required to search for them is equivalent to 2.54 FTE (full time employees) within the medical records department. In addition, 8% of records that were requested were not found in the exact location (displayed on the system) and the additional time spent searching for them was equivalent to 0.64 FTE.

The solution: RFID enabled medical records management system

A small RFID tag is attached to each physical medical record. Each tag carries a GDTI (Global Document Type Identifiers) which uniquely and accurately identifies the file and corresponds with a record on the Patient Administration System (PAS). Through the use of fixed RFID readers placed at key locations in the hospital, including the exit/entrance of the library and selected areas around the hospital, the movement of files can be automatically tracked. In addition, through the use of handheld RFID reading devices, if a file is misplaced or its precise location in an area is not obvious, the hand held reader can be used to sweep an aisle in the library, or a secretary’s office, or a clinic area to exactly pin down and locate a file.

The benefits of using RFID technology to trace medical records

The review by GS1 UK identified key areas where efficiency improvements could be made. By replacing manual processing of returned records with an automated system, the department could save 1.2FTE p.a. equivalent to £22,600 p.a. Automating location tracking throughout the hospital could save 1.3FTE p.a equivalent to £25,000 p.a.

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Improved efficiency

Greater visibility of file locations means that clerks can plan their routes around the hospital better, which saves at least 1 hour per day for 6 clerks in walking between departments to locate files. Manual tracking can be removed in certain locations, such as receiving files back into the library which can save 15 seconds per file movement which equates to 1 FTE p.a., or nearly £19,000 p.a.

Saving precious resources and ensuring patient safety

It is projected that almost £230,000 of revenue is lost to the hospital each year due to medical records not being available. The RFID based system reduces the number of missed files and makes “missing” files easier to locate enabling this revenue to be recovered. It also reduces the chances of notes not being available for a patient clinic visit, or not being located in timely fashion for an emergency or unplanned visit, which improves the patient journey, is reduced and that safety risks attached to consultations without complete case notes are also reduced.

Further opportunities provided by RFID technology

The same RFID infrastructure used for medical records has many other potential applications within the hospital. For instance, RFID readers at the entrances and exits to wards and clinics could provide the basis for an efficient asset tracking solution, which would help staff trace items such as beds and mobile equipment. Work is currently underway at the Royal Bolton to tag the patient ‘green bag’ in order to more easily trace patients’ movements around the hospital and help with important processes such as infection control.

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