CASE STUDY | UNIVERSITY HOSPITALS PLYMOUTH NHS TRUST

RFiD DISCOVERY

How RFID helps Plymouth NHS Trust manage medical devices during Covid-19 crisis

After only recently embarking on the implementation of an RFID Discovery system to track 43,000 medical devices with passive RFID, GS1 demonstrator site University Hospitals Plymouth NHS Trust (UHP) is seeing early benefits of the new technology during the current coronavirus crisis.

Equipment from COVID wards has been given priority for tracking and with over one third of their medical devices fitted with GS1 compliant passive RFID labels, the Trust is already noticing a positive impact on the management of equipment in response to the crisis.

Real-time visibility of assets

The benefits of real-time tracking are already evident thanks to the high performance of two fixed Impinj xArray readers which have been installed in the medical equipment library (MEL) and in the entrance bay to the Clinical Engineering department, to detect the movement of tagged equipment in and out. Whilst this only represents a small fraction of the planned 92 fixed readers which will form part of the system, UHP has already seen a dramatic benefit of monitoring these two key locations.

The clinical engineering team now has real-time visibility of all devices returned to the decontamination area of the MEL thanks to the RFID Discovery web portal.

> The system has been hugely beneficial for us by tracking devices as they come and go, enabling us to see whether they are actively in use. Even more crucially we can now see at a glance what is in stock, saving clinical staff a wasted trip to the medical equipment library.

Alex Peters, Clinical Engineering Technician, UHP

How does it work?

Passive RFID labels replace the existing asset labels, and are fully compliant with GS1 standards, carrying a Global Individual Asset Identifier (GIAI). They are encoded with a unique ID which is linked to a particular asset in the database on registration. Unlike active tags, passive RFID tags have no battery and require an external source to trigger a signal transmission such as a passive RFID reader.

In addition to fixed readers, UHP's clinical engineering staff use two different types of mobile passive RFID readers, which capture data from the tags and send location information to a central database. A specially designed trolley fitted with a UHF RFID reader and three antennas performs equipment searches as it is pushed around the hospital by a clinical engineering technician.

With a read range of typically up to eleven meters it records the date, time and location when it detects a passive tag. In addition, a small mobile handheld reader with a read range of up to six metres is also used to locate specific equipment.

Identifying devices from COVID wards

Alex Peters, Clinical Engineering Technician assisting the implementation at UHP comments: "The system enables us to quickly establish when a device from a COVID suspected ward has been dropped off, and ensure it's dealt with appropriately. This is in combination with other measures we have put in place, such as different physical drop-off points for the wards depending on their COVID status.

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The ability to check real-time stock via an online portal will also be made available directly to clinical staff enabling them to see equipment availability from the MEL or even neighbouring wards without the need to contact the engineering team.

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>
> **Steve Pulseston,** Business Development Manager at UHP

Key Benefits

- Identifying assets from COVID wards
- Reduced time spent looking for devices
- Real-time visibililty of available devices in the medical equipment libary
- Fast auditing of devices
- Easily identifying which devices are actively in use

Coping with constant change

During this difficult time of coping with the virus outbreak, medical device management at UHP has been further complicated by the fact that several ward and department movements have taken place, not just internally but also to external sites, in the effort to keep wards safe and increase ICU capacity from 28 to potentially 110 if required.

As the hardware infrastructure for tracking is not fully in place, the Trust is not yet always able to actively locate a device's whereabouts once it has left the workshop in real-time. In the meantime, two mobile trolleys and several handheld readers have been used to perform equipment searches across other locations within the Trust.

Steve Puleston, Business Development Manager at UHP explains: "Mobile scans have had to make up the gap in knowledge until our full infrastructure is in place. During this time of constant change, it was critical to make sure that staff had an additional level of awareness to confirm the location they are auditing, so that the information synced with the database is accurate. But it has been very worthwhile as it's now much easier to locate devices for tasks such as re-calling and re-deployment."

With regular sweeps of all departments, data will be enriched by many more 'last-seen' locations, making the available information more accurate and helping engineering and clinical staff locate items quickly.

In response to Covid-19, UHP has also had thousands of new devices including ventilators coming in rapidly for commissioning. Every new device is registered onto the database and labelled with an RFID tag, making it ready for tracking immediately.

Medical device with GS1 compliant asset label

Additional benefits

The re-labelling process

Finally, the Trust has also seen a number of direct benefits simply due to the audit process of switching to RFID itself.

Steve Puleston added: "Re-labelling thousands of devices to RFID has been the perfect opportunity to audit our entire database and determine which devices are no longer active due to being misplaced, damaged or decommissioned. In a recent example came we had to quickly establish how many Draeger Delta monitors on our database were available for re-deployment if necessary. We were able to instantly establish with confidence that 171 out of a possible 227 monitors recorded on the database were active and available should they be needed."

Fast implementation

Despite all the additional coronavirus challenges, the dedicated clinical engineering team at UHP has managed to get the new system implemented earlier than expected.

Sandie Wills, Scan4Safety Project Manager at UHP comments: "Initially, we were worried that the implementation of the solution would be slowed down by the current crisis. Instead we have used it as an opportunity to get the system up and running quicker, so we could benefit from it during this challenging time."

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What's next?

Thanks to the initial successes, UHP are very much dedicated to extending the use of the RFID tracking system further.

Sandie Wills elaborates: "The next stage for us is to install the remaining 90 fixed readers in priority areas across the Trust site and put into place a staff awareness and training programme on the use of the Discovery search engine, so all clinical staff will be able to locate their nearest device."

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Why choose RFiD Discovery?

RFiD Discovery is the recognised brand name for radio frequency identification solutions from Paragon ID, a global leader in identification solutions. Used in a growing number of hospitals across the UK and beyond for over 14 years, RFiD Discovery is the number one choice for active and passive RFID systems.

Paragon ID is largest manufacturer of passive RFID labels in Europe and accredited to ISO 9001.

GS1 UK Industry Partner

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RAIN RFID

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Steve Pulseton,
Business Development Manager, UHP

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