CASE STUDY | EAST KENT NHS TRUST

RFiD DISCOVERY
A Paragon ID company

Pioneering foam mattress management with RFID technology

Building on the success of tracking medical devices such as infusion pumps, ECG monitors and beds, East Kent Trust Hospitals University NHS Foundation Trust (EKHUFT) is pioneering the use of RFID to manage one of the most fundamental – yet often overlooked – items in patient care: foam mattresses.

EKHUFT is one of the largest hospital trusts in England, delivering acute care services across multiple sites including Queen Elizabeth The Queen Mother Hospital, Kent & Canterbury Hospital, and William Harvey Hospital. The Trust has long been a leader in using technology to improve efficiency and patient safety and was one of the first in the UK to adopt RFiD Discovery's asset tracking system to manage medical devices across its hospitals.

Challenges

Foam mattresses are critical to patient safety and comfort, but managing them across three large hospitals is a real challenge. Each mattress must undergo regular inspections to prevent pressure ulcers and ensure hygiene.

CQC (Care Quality Commission) regulations require hospitals to demonstrate when each mattress was last checked and whether it passed a defined set of safety and cleanliness criteria. EKHUFT's previous process relied on manual checks with results written directly onto mattress covers - a method that was inefficient, inconsistent, and lacked any centralised audit capability.

Additionally, identifying and locating individual mattresses was difficult. Manual methods like barcode scanning required physical contact or line-of-sight visibility, which posed a risk when handling contaminated or severely soiled items.

The solution

In partnership with RFiD Discovery, EKHUFT has deployed an RFID-enabled mattress tracking system covering 1,700 foam mattresses across its hospitals. The solution leverages the existing RFiD Discovery medical device tracking infrastructure to capture mattress locations, including fixed passive RFID readers in key areas like the bed store, an RFID trolley pushed around wards during audits, and handheld RFID readers used for spot checks in smaller areas. To track foam mattresses, the following two additions were made:

1) Each foam mattress is fitted with two passive RFID tags: An internal label inserted inside the mattress cover at one endand an external rubber tag containing the same unique identifier, attached to the zip via a small cable tie.

This dual-tag design maximises the chances of the mattress being detected by RFID readers.

2) When mattresses reach the end of their life:

Smart RFID Disposal Bin

The external rubber tag is removed at the disposal point and placed into a smart RFID disposal bin equipped with internal readers.

As a result, the system automatically updates records, removes the mattress from circulation and provides an audit trail of disposal.

> Using passive RFID technology has transformed the way we manage our foam mattresses.

Andy Barrow
Head of Electronics, Medical Engineering & Radiology Maintenance at East Kent Hospital University NHS Foundation Trust

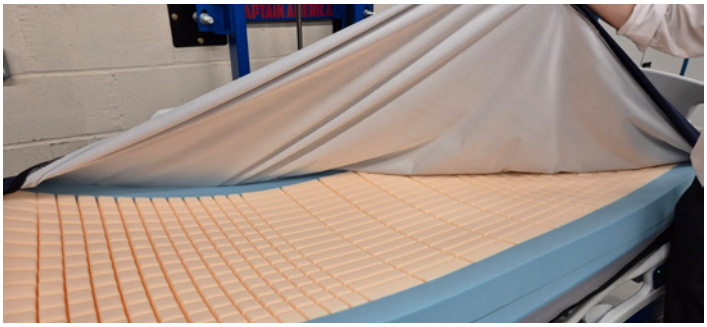
External rubber RFID tag on foam mattress

Key Benefits

- Digital evidence of mattress inspections & disposal
- Improved patient care
- Increased operational efficiency
- Better infection control
- Improved asset visibility
- Valuable data for future planning

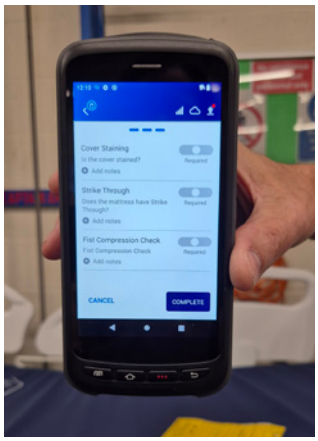
Annual mattress checks

Nursing teams carry out a structured seven-point mattress check each year using a dedicated app on the RFiD Discovery handheld reader. This ensures the correct mattress is being checked by matching each RFID tag to its corresponding record in the database so that inspection results are automatically and correctly logged against the right asset.



Internal check being carried out on foam mattress

The app guides the user through the required inspection stages including a comprehensive assessment of the mattress' external condition, internal foam integrity, odour, and overall functionality. Results are recorded directly in the system and uploaded in real time to a centralised database.



App with inspection module

The system is also used to record the result of an acceptance test when foam mattresses are first delivered, ensuring that every mattress entering circulation meets quality and safety standards from day one.

The benefits

The implementation of RFID mattress tracking has delivered several key benefits:

Compliance & assurance

The Trust can provide digital evidence of inspection and disposal to the CQC and internal auditors, strengthening accountability and providing full traceability.

Patient care & safety

By making it easy to locate mattresses due for inspection the solution helps to ensure that all are checked as required. This means faulty or contaminated mattresses can be identified and removed, reducing risks of infection and pressure ulcers.

Operational efficiency

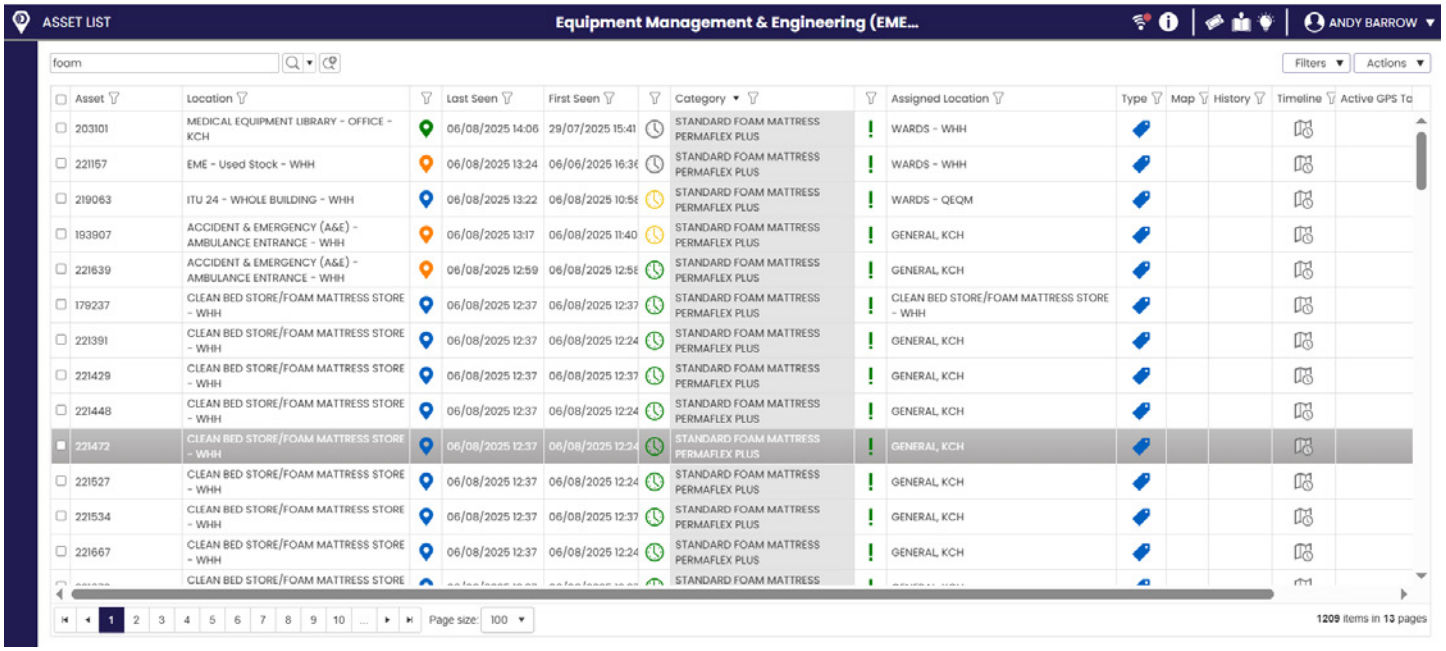
Automating mattress identification and disposal tracking eliminates manual record-keeping and reduces administrative burden, while the ability to locate mattresses quickly saves time to improve efficiency.

Infection control

RFID readers can scan and identify mattresses without requiring physical contact or visual access to tags - ideal for infection control when dealing with contaminated or severely soiled mattresses.

Asset visibitliy and future planning

By automatically capturing accurate information about mattress status and disposal, the system provides accurate data of available, in service or unfit-for-use mattresses to assist planning and inform procurement decisions.



RFiD Discovery software - Overview of mattresses - List view

RFiD DISCOVERY

Conclusion

By extending the use of RFiD Discovery's passive RFID system from tracking medical devices to everyday patient care assets like foam mattresses, East Kent Hospitals NHS Trust is demonstrating true innovation in healthcare asset management. Above all, the approach safeguards patients and also ensures the Trust meets regulatory requirements while maximising operational efficiency.

Andy Barrow, Head of Electronics, Medical Engineering & Radiology Maintenance at East Kent NHS, who implemented the system in 2024, commented: "This technology has transformed the way we manage our foam mattresses. We now have complete confidence that every mattress is tested, tracked, and either maintained or disposed of appropriately, helping us keep patients safe while improving efficiency."

This pioneering initiative is setting a new standard for mattress management within the NHS, offering a model that other healthcare providers can replicate.

NHS
East Kent Hospitals University
NHS Foundation Trust

Why choose RFiD Discovery?

RFiD Discovery is a leader in integrated identification and location tracking solutions. Used in over 200 hospitals across the UK, Europe and beyond for over 15 years, RFiD Discovery is the number one choice for medical device tracking and other healthcare location solutions using RFID, BLE and other technologies.

We are part of Paragon ID, hold the Cyber Essential certification and our system is GS1 UK approved.

Paragon ID is a RAIN Alliance member and certified to ISO9001, ISO14001, ISO27001 and ISO45001 standards.

GS1 UK Approved

RAIN ALLIANCE

> We now have complete confidence that every mattress is tested, tracked, and either maintained or disposed of appropriately, helping us keep patients safe while improving efficiency.

Andy Barrow
Head of Electronics, Medical Engineering & Radiology Maintenance at East Kent Hospital University NHS Foundation Trust

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