Traceability in the NHS:
How to adopt asset tracking technology and five tips to make it a success

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The challenge and cost of manual equipment tracking

In 2016 a leading NHS Trust reported that 15% of its known critical assets (with a value of £22 million) had been reported lost over the previous five years. Just 6% of equipment was returned to the device library and the Trust estimated the cost of replacing its entire missing inventory would be more than £140 million.

It may not grab the headlines, but locating equipment required for patient care or planned maintenance is a time consuming and costly task for NHS Trusts across the UK. Items of equipment – everything from nebulisers and endoscopes to wheelchairs and beds – are constantly being moved between wards and around hospital estates. Manually keeping track of these items across multiple sites is an inefficient and ineffective way to manage resources and ultimately, is detrimental to paitent care.

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The true cost of missing equipment

A 2009 study[1] found that nursing staff spend up to two hours in every eight-hour shift searching for equipment. This equates to 40 hours a month and £900 million of NHS wages a year, not to mention the costs of replacing unrecoverable items.

But the impact of missing equipment doesn't end there. Failure to locate or maintain equipment can result in a major impact to patient care, including delays to the treatment and discharge of patients. In fact, in 2014, research[2] within seven NHS organisations found that around 10% of operations were delayed because of missing or faulty equipment.

Put those figures within the context of an overstretched NHS, under increasing pressure to reduce spending and stay within tightly controlled budgets, and it is clear that smart solutions to address the problem of missing equipment are badly needed.

Some NHS Trusts are taking advantage of innovative technology to track and manage high-value medical devices and other assets. By applying effective medical equipment logistics management, they are benefiting from significant efficiencies, improvements in staff morale and better patient care.

This paper looks at some examples of how tracking technology has been implemented for improved traceability...

[1] https://www.nursingtimes.net/nurses-waste-an-hour-a-shift-finding-equipment/1987381.article
[2] http://discovery.ucl.ac.uk/1352427/1/BMJ_Qual_Saf-2012-Burnett-466-72.pdf

Investing in digital: Driving efficiency in healthcare
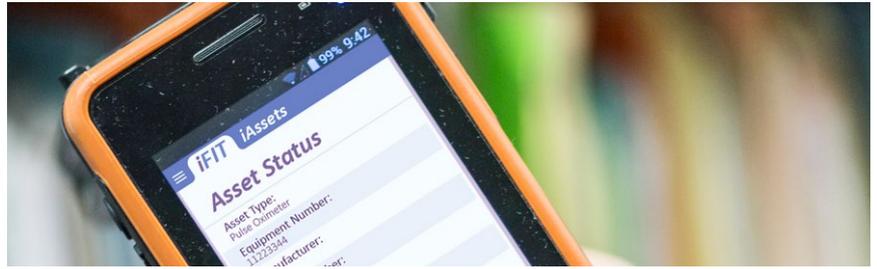
In October 2018,[4] the Secretary of State for Health and Social Care, Matt Hancock, highlighted the importance of the NHS investing in new technologies.

Mr Hancock went on to describe data-driven advances in cutting edge technologies, such as artificial intelligence and robotics, that can help diagnose diseases and support patients and their carers.

But NHS Trusts are also highly conscious of the potential of technology for their day-to-day needs. In 2016, an independent report[5] for the Department of Health by Lord Carter of Coles looked at what could be done to improve efficiency in hospitals in England.

> *"Very few Trusts are able to demonstrate even a basic level of control or visibility over total inventory or purchase order compliance that is common practice in other health systems and industrial sectors such as retail."*

Lord Carter of Coles looked at what could be done to improve efficiency in hospitals in England. The report called for Trusts to invest more in technologies, including the introduction of:

» RFID systems, to help manage the location and usage of hospital assets.

» GS1 barcoding, a technology that's already used in retailing and introduced to the NHS as part of its Scan4Safety[6] programme.

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[4] https://www.gov.uk/government/publications/the-future-of-healthcare-our-vision-for-digital-data-and-technology-in-health-and-care/the-future-of-healthcare-our-vision-for-digital-data-and-technology-in-health-and-care

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/499229/Operational_productivity_A.pdf

[6] https://www.scan4safety.nhs.uk/about/

Taking the Carter recommendations forward: Using technology to track

> *"Just being able to make the best use of mainstream products and services would transform health and social care in this country. But it's not just about getting the current systems to work better – our ambition should be for the use of the best technology available for the NHS and social care sector."*

Matt Hancock
Secretary for Health and Social Care

RFID: technology for effective asset tracking

Radio Frequency Identification (RFID) has been in use since the late 1990s and has had a major impact in the logistics and retail sectors. Now RFID is increasingly being used in hospitals. The technology uses radio waves to read and capture information stored on a microchipped tag attached to an object. An antenna on the tag means it can be located using a hand-held RFID reader or as it moves under an RFID reader and sensor, and because each item's tag has its own individual serial number, the reader can differentiate between identical items of equipment.

There are two types of RFID systems:

1. **Passive systems** are powered by electromagnetic energy transmitted from an RFID reader, and are used for applications such as access control, file and asset tracking and supply chain management. Pricing for a passive tag ranges from 30p to £4 each.

2. **Active RFID systems** use battery-powered RFID tags that continuously broadcast their own signal through triangulated WiFi access points. These systems are used to accurately track the real-time location of assets and are more suitable for clinically critical and high-value devices.

By scanning the GS1 barcode on the asset tag to a patient GS1 barcode identifier, staff are provided with the full status of the asset, including its location and usage history, as well as its maintenance schedule. This data can also be used to provide full traceability of the patient a device has been used on, when, where and by who. This is particularly relevant for Infection Control, providing a full audit of usage for beds, mattresses and medical devices.

The benefits of smart asset logistics management
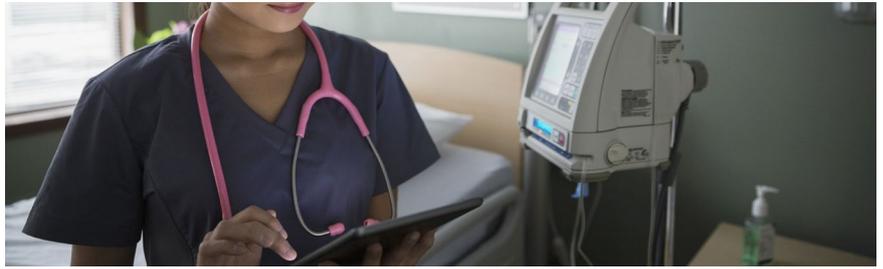
Under or overstocking of supplies, theft, incorrect storage, limited tracking and infrequent maintenance are just some of the reasons why items of hospital equipment aren't available when needed.

At the same time, poor procurement management means too many consumables are going to waste. Seven years ago, the National Audit Office[3] identified that fragmented procurement practices and a lack of data was leading to a great deal of waste within the sector, with annual savings of 10% possible if greater control was introduced. However, NHS Trusts continue to struggle to maximise these efficiencies.

There are numerous benefits for NHS Trusts who invest in modern, effective asset logistics management systems, as such systems:

» Use the most up-to-date technology, which makes it much easier to locate equipment.

» Ensure devices are well maintained, safe and hygienic, reducing the chances of infection, and cutting maintenance costs.

» Reduce unnecessary procurement through improved tracking, thereby avoiding replacing equipment that isn't actually missing. For example, a cardiograph that records heart muscle activity can cost as much as £8,500 so this represents sizeable savings potential.

» Guarantee correctly maintained equipment can be found when it's needed, saving time and enabling clinical staff to devote more of their day to direct patient care, reducing the number of falls, cross-infections and pressure ulcers – treatments that can cost a Trust up to £15,000 per patient.

» Monitor usage of equipment, providing invaluable data to inform capital planning and decision making.

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[3] https://www.nao.org.uk/report/the-procurement-of-consumables-by-nhs-acute-and-foundation-trusts/

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Five factors to consider to make smart asset management a success

1. **Engaging staff:** Any change to process can be hard for staff to get on board with, especially when they are already busy. Clearly communicating the benefits of new technology is essential – the huge cost savings that are made possible by iAssets can be reinvested in frontline services.

2. **Focus on stories:** Most people working within the NHS are driven by caring for others and get satisfaction from contributing to the health and wellbeing of thousands of people every day. Bureaucracy (and technology) is often seen as a barrier which gets in the way of this. Highlighting personal stories of how asset management has ensured essential equipment is available when patients need it, can help embed new processes in the day-to-day running of the Trust.

3. **Smart data:** Data analysis from smart asset management can identify areas where most improvements can be made. It also supports patient safety. While tracking equipment can seem like common sense, in a pressured healthcare environment staff don't have the time to be technology experts. That's why any asset management system must be simple and easy to use. For example, iAssets uses a simple map view of the hospital site to allow staff to find the nearest available equipment.

4. **Scaling up the impact:** Small changes or savings add up when considered across a whole NHS Trust. While asset management can be applied to high-value equipment like scanners, it can also ensure timely delivery, tracking and ordering of specimens, small devices and drugs. The experienced team at Idox can help you explore the full potential of the scalable solution during the planning stages.

5. **Local level champions:** Patients are the real beneficiaries so getting senior staff support is crucial. Use of iAssets allows hospitals to increase the availability of clinical staff for direct patient care (and reduces the number of potentially adverse incidents).

iAssets:
a 360 degree view of hospital assets

iAssets is Idox Health's asset logistics management system, providing users with the ability to locate, manage and utilise medical equipment more efficiently.

Using both passive and active RFID technology, iAssets tracks item movement and availability, manages asset assignment to patients and continuously checks their maintenance schedules. In addition, iAssets' new SmartFind feature offers an interactive map of the hospital estate, pinpointing the location of available hospital equipment in real time. This ensures shorter search times and increased patient safety.

With GS1 compliance built into the platform, the solution aligns with Scan4Safety programmes and provides traceability of the assets assigned to each patient, including time and location data.

It also aligns with best practice as laid down by the National Patient Safety Agency (NPSA) and the Care Quality Commission (CQC). The system can be deployed at a departmental level and then extended, leading to increased savings as more departments embrace the solution.

Currently iAssets has been taken up by seven NHS Trusts, and has contributed to savings worth up to £2.5 million in individual Trust cost improvement programmes.

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Case study:
Asset logistics management in action

Streamlining Medical Equipment Management for Homerton University Hospital NHS Foundation Trust

Based in the London Borough of Hackney, Homerton University Hospital provides general health services across the community, with staff working out of 75 different sites. The hospital has over 500 beds spread across 11 wards, a 9-bed intensive care unit, as well as maternity, paediatric and neonatal wards. The Trust employs over 3,500 staff and is recognised as an innovator in embracing methods and systems that promise better and safer patient care.

The Trust came to realise that staff at Homerton University Hospital were spending too much time looking for equipment that had been lost, stolen or transferred to locations outside the hospital. With inadequate facilities for undertaking equipment audits, the Trust had limited information about device availability, resulting in significant costs for replacing equipment.

A new solution – **iAssets** from Idox Health – delivered the tools that the hospital needed to track, locate and utilise medical assets far more efficiently than before.

Since adopting iAssets, ward audits have been simplified, giving staff greater visibility and allowing equipment to be retrieved in a timely manner. The Trust has also been able to reduce procurement costs significantly, increase planned preventative rates by **15%** and discontinue an **£80,000** annual maintenance agreement after iAssets identified the equipment covered was no longer in service.

Brian Long, Head of Medical Electronics at Homerton University Hospital NHS Foundation Trust, believes iAssets has been instrumental in turning around the hospital's medical equipment management.

"We can now locate our equipment easily and quickly. In the past, if an item was moved out of the library or between departments in the middle of the night, we wouldn't know where to find it in the morning. After implementation and when items were no longer going missing, we discovered that we were overstocked. We have been able to reduce our inventory procurement level by 25%."

Read the full case study

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Conclusion

Across the NHS, the cost of missing or lost equipment is estimated to be in excess of £2 billion. Given the subsequent impact on the healthcare of patients, this situation is clearly unsustainable.

A cost-effective asset management system can support NHS Trusts in identifying and locating the right equipment for the right patient, at the right time. It delivers improved reporting capabilities, reduces department overheads and auditing time, as well as lowering procurement and maintenance costs.

Above all, asset tracking systems enable hospitals to increase the availability of clinical staff for direct patient care, resulting in improvements in patient experience and health.

Idox Health's logistics management solution for assets enables more efficient location, management and utilisation of medical equipment. A GS1 compliant solution and used by Trusts to support Scan4Safety, iAssets provides full traceability to aid patient safety and support more informed asset utilisation and capital expenditure.

Interested in finding out more?

Visit **health.idoxgroup.com** or email us at **idoxhealth@idoxgroup.com** for more information about iAssets or any of our other products and services.

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