



Healthcare  
Improvement  
Scotland

**SHTG**  
Advice on health  
technologies

# Bluetooth Tagging – evaluation of potential for efficiency gains from tracking medical equipment

Plain language summary | August 2022

## What is Bluetooth tagging?

A Bluetooth asset tracking system uses wireless technology to create a connection between a tag on an object, for instance a piece of medical equipment, and the tracking device. The tracking device is paired with a piece of software such as a mobile phone or a computer database to capture data. This data can then be used to determine the location of the piece of medical equipment.

## Why is this important?

When medical equipment moves between wards or departments staff frequently lose track of where items are. When staff have to spend time searching for these items it can reduce the time they have to spend on patient care or it can delay a person's treatment. Lost or missing equipment can also mean money spent on the equipment is wasted or has to be spent again to replace it.

## What we did

We looked at the published evidence around the different ways medical equipment can be tagged in a hospital setting. We looked at results from a pilot

study using a system called Floki Bluetooth tagging undertaken in a Scottish health board and we asked all the health boards in Scotland if they currently use any kind of tagging system for their medical equipment.

We also considered the cost savings which could be generated from the implementation of a Bluetooth tagging system based on the results of the pilot study and missing equipment in the same board over the last five years.

### What we found

We found that the published evidence and the experience within the NHSScotland pilot study have shown that tagging medical equipment comes at a cost, but it saves time for staff.

There are many different technologies available for tagging medical equipment. There are tagging systems which use tags with a Bluetooth function and others which use tags with a radio frequency function. Radio frequency identification (RFID) technology is another technology which can be used for tagging medical equipment. This uses electromagnetic fields to transfer data rather than Bluetooth technology. Wi-Fi systems also exist to track medical equipment.

Having asked health boards across Scotland if they were currently using an equipment tracking system and what kind of system they were using we received 11 responses. Seven of the 11 responses said they had some experience using a tagging system, five of these said they currently used a RFID system. Four respondents stated they had no experience of using any tagging system.

The cost effectiveness analysis showed cost savings from implementing a Bluetooth tagging system compared with the cost of having no tracking system. It showed that despite an upfront cost to buy the tagging system and ongoing maintenance costs, there is an overall cost saving. This came from a reduction in time staff spent searching for items and from financial savings from not having to replace lost equipment. Because the upfront cost is higher than the maintenance cost, the longer the system is in place the more money it saves.

### What is our conclusion?

Using a tagging system is a cost effective way to keep track of medical equipment, when there is evidence of a need to do so. There is currently no standard solution that will cover the requirements of NHSScotland as a whole. Each board will need to work with providers to adapt solutions to suit their individual requirements and environments.

### What next?

There is very limited research into this topic or data around current usage within Scotland. The creation of further evidence would be beneficial.

This plain language summary has been produced based on SHTG Assessment, August 2022