Abstract: The clinical and financial impact of a new nurse-led service for insertion of implantable loop recorders at the university hospital

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Introduction
The implantable loop recorder (ILR) plays a crucial role in facilitating diagnosis in patients with unexplained syncope or intermittent palpitations. ILR implants have been proven to be cost effective and have higher diagnostic yield compared to traditional investigations.

Historically, cardiologists implanted ILRs. There is a move towards training Allied Healthcare Professionals (AHCPs) to meet the increasing demands and speed up the diagnosis and management for patients. We developed a dedicated Nurse-led weekly ILR implantation service at UHL from April 2017 run by Arrhythmia Advanced Nurse Practitioner and a senior Catheter Lab Nurse who received dedicated training.

Purpose:
We carried out a review of the service to assess its efficiency and impact on patient management.

Methods
Firstly, we assessed the efficiency and safety of the Nurse-led service. We reviewed all the ILR referrals and implants from April to November 2017 and looked at the waiting times and time to diagnosis from implantation. This was compared to the same period in 2016. We then assessed the costs of the procedure and the revenue generated.

Secondly, we prospectively gathered follow-up data for 6 months to assess the diagnostic yield from the 104 ILRs implanted by the nurse-led service between July and December 2017.

Results
The total number of patients undergoing ILR implantation between April and November increased from 89 In 2016 to 136 in 2017. The volume of day cases that were undertaken between April and November 2017 was 53% higher than the previous year. Despite a 30 % increase in the referral rates, the waiting times for the day case implants showed a steady decline to an average of 4-5 weeks (Figure 1a).

During the period in 2016 five ILR’s were explanted due to infection. With the new nurse-led service we have seen a 74% reduction in rate of infection requiring explant.

The service change generated an additional income of £233,107 through the increased activity of the Nurse-led ILR service alone and made cost saving of £1064.15 per list.

Two thirds of loop recorders were inserted for investigation of syncope whilst a third was for tachy-arrhythmia detection. Within the first 6 months, ILR guided a diagnosis in 59% patients (Figure 1b).

Conclusion
The new Nurse-led ILR implantation service is safe and effective for patients. It has played a crucial role in guiding diagnosis in 59% of patients within 6 months of implantation. In addition, this dedicated service has increased flexibility and access, and provided a reduction in the cost of service delivery.

Figure 1. (A) Waiting time for day case ILR implants. (B) Diagnostic information from ILR downloads at 1, 3 and 6 months post implant between July and December 2017.