



CASE STUDY – ADVANTICS™ Operational Productivity
**Benefits of Alert-Based Only Remote
Patient Management at leading
CardioThoracic Hospital in UK**

**Insights.
Collaboration.
Impact.**

Advancing partnership
for better outcomes



EXECUTIVE SUMMARY



Client

Liverpool Heart and Chest Hospital, United Kingdom

Catchment area of
~2.8 million people

13,000+ inpatient procedures

100,000+ outpatient procedures

Challenges

- 1 3,000 pacemaker patients with one scheduled download at **£545K per annum¹**
- 2 210 pacemaker patients needing an additional F2F appointment⁴ at **£35K per annum²**
- 3 Total footprint of CO₂e **1.2 T/year⁵**

Cost and capacity analysis



Baseline assessment with immediate implementation of an alert-based only model for bradycardia patients

+



In-depth benefit analysis with quantification in terms of efficiency, costs, capacity and environmental impact.

Deployed
Solutions



Impactful Outcomes

£390K estimated with an alert-based only model
ANNUAL COST SAVINGS

134 capacity saving with alert-based only model
DAYS³/ANNUM

66% in greenhouse gas emissions per year
SAVINGS

About the Hospital

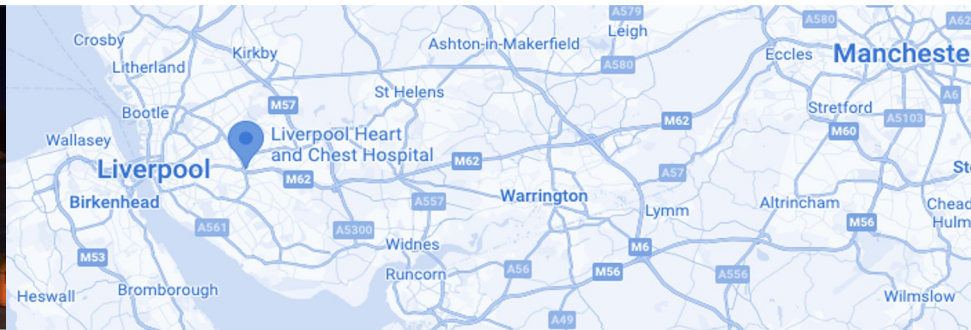
As one of the largest single-site cardiothoracic specialty service hospitals in the UK, the Liverpool Heart and Chest Hospital (LHCH) serves a catchment area of nearly 2.8 million people.

Per year, LHCH handles more than 13,000 inpatient and

more than 100,000 outpatient procedures. LHCH's reputation for strong performance supports their mission to deliver the best patient care and provide high quality clinical services.

Driven by a culture of research and innovation

facilitated by technology, the hospital has designed new and upgraded clinical areas with patients and their families to extend access to and improve the quality of revolutionary care.



Customer Challenges

LHCH is one of the leading specialist hospitals for cardiothoracic care and treatment in the country.

The hospital has the largest remote pacing clinic in Europe, currently caring for over 3,000 pacemaker

patients through remote follow-up. The use of remote monitoring is growing in clinical practice; however, there are critical issues in ensuring its long-term effectiveness, efficiency, and sustainability.

As part of our long-term collaborative partnership with LHCH, the Boston Scientific team of experts has been working with the Cardiac Diagnostics team at LHCH to optimise their RPM service.

Deployed Solutions

PHASE 1.1

Baseline Assessment

Phase 1 of the ADVANTICS™ Operational Productivity project culminated in a detailed report with insights and recommendations, highlighting the risks of maintaining the status quo.

The evidence substantiated the need for a comprehensive review and redesign of LHCH's existing remote patient management service and for the investment in additional resources. One of the key immediately actionable improvement opportunities was the implementation of an Alert-Based Only model for Bradycardia patients.

LHCH established this new protocol for patients with new pacing implants. The RPM Service will no longer download data once a year for routine analysis. Instead, they will rely on CIED alerts: any detected abnormality will automatically create an alert sent directly to the Cardiac Diagnostics team for triage and review.

This protocol also enables LHCH to fully leverage cutting-edge medical technologies such as BSC's LATITUDE™ NXT Remote Patient Management System, which provides more personalised and effective treatments.

PHASE 1.2

Benefit Analysis

The BSC team conducted an in-depth analysis and quantified the potential benefits of the Alert-Based Only Model for LHCH in terms of efficiency, costs, capacity, and environmental impact. The modelling projected that by 2028, approximately 3,000 pacemaker patients will be managed through the new protocol each year.

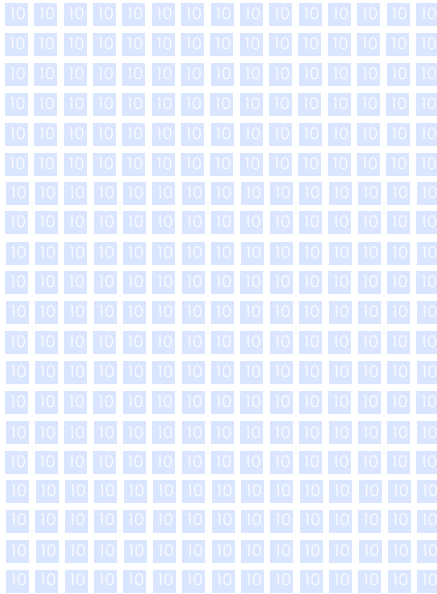
The infographics on the next page illustrate the service costs and capacity before and after the implementation of the Alert-Based Only approach.

Impactful Outcomes



Estimated costs of previous follow-up model

1



Pacemaker Patient Population

LHCH have around
3,000 pacemaker patients



@ **£545K**

+



@ **£35K**

=



@ **£580K**

Scheduled downloads

All patients would have one scheduled download a year at a total remote clinic cost of **£545K per annum¹**

Face-to-Face Consultations

Estimated 7% of patients (210 patients) need also a F2F appointment⁴ at **£35k per annum²**

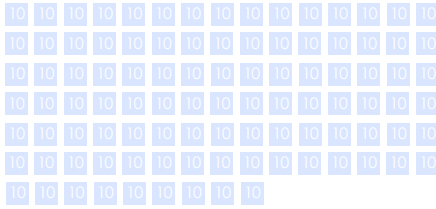
Total Annual Costs

Impactful Outcomes



Estimated cost of Alert-based model powered by ADVANTICS™

2



Device-generated alerts

Only **33%** (990 patients per annum) of all LHCH pacemaker alerts were **device-generated**³



@ **£178.2K**

+



@ **£11.5K**

=



@ **£189.7K**

Alert-only downloads

Remote follow-up only on the **device-generated** alerts: **£178.2K per annum**²

Face-to-Face Consultations

Estimated 7% of patients (69 patients) need also a F2F appointment⁴ at **£11.5k per annum**²

Total Annual Costs

Projected Cost Savings by Switching to Alert-Based Only Model



£390K

Estimated cost saving per annum of **£390K**



134
DAYS³

Estimated capacity saving per annum of **134 days**³

Impactful Outcomes



Environmental Impact

3

Environmental Impact of Current Model



Travel Burden

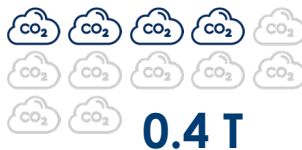
210 pacemaker patients travelling to LHCH and back for a F2F appointment every year.

CO₂ footprint

Total footprint of CO₂e for pacemaker patients' travel would **be 1.2 tonnes/year⁵**
CO₂e per patient for travel 2.9 kg

4

Environmental Impact of Alert-Based Only Model



Travel Burden

69 pacemaker patients with an alert who need a F2F appointment travelling to LHCH and back every year.

CO₂ footprint

Total footprint of CO₂e for pacemaker patients' travel would **be 1.2 tonnes/year⁵**
CO₂e per patient for travel 2.9 kg

Projected GHG Savings by Switching to Alert-Based Only Model



66%
REDUCTION

Lower Greenhouse Gase Emissions

Concluding Remarks

This case is demonstrative of the potential of NHS and industry collaboration on Value-Based Procurement (VBP) programmes, shifting the focus toward the overall value and outcomes that procurement and industry partnerships can deliver.

Boston Scientific is committed to this approach, supporting VBP aims to improve patient care and operational efficiency by evaluating the total cost of ownership and

the impact on patient pathways. It also enables the NHS to fully leverage cutting-edge medical technologies, such as the BSC LATITUDE™ NXT Remote Patient Management System.

LHCH, the Boston Scientific Healthcare Solutions and Partnerships team, and the Rhythm Management division continue to work together to further optimise the RPM service.



"This has been a new way of working for our staff. We have seen significant improvements in efficiency with targeted health care delivery. Changes on this scale have only been achieved through close collaboration with Boston Scientific and we look forward to expanding the service."

Prof Dr. David Jay Wright

Director of Research and Innovation, Liverpool Heart and Chest Hospital

ADVANTICS™ solutions



HELPING YOU TO
Achieve financial sustainability

Integrating new technology seamlessly with tailored financial models and capital financing solutions.



HELPING YOU TO
Elevate efficiency in every step along the care pathway

Streamlining workflows, optimizing capacity, and reducing administrative burden through process redesign and resource alignment.



HELPING YOU TO
Treat the right patient at the right time

Optimising referral networks through education, engagement, and streamlined communication strategies that increase patient inflow and referrer satisfaction.



HELPING YOU TO
Put the patient at the centre

Enhancing patient experience with clear communication, reduced stress, and improved clarity and confidence throughout the care journey.

REFERENCES

1. NHS reference costs for Cardiology Service Outpatient appointment 2021/22 = £167 <https://www.england.nhs.uk>
2. NHS reference costs EY11Z (Distant pacemaker testing) for 2022/23 = £180 <https://www.england.nhs.uk>
3. Boston Scientific and LHCH ADVANTICS™ report dated Feb 24; data analysis using LHCH LATITUDE™ data report
4. Sane et al (2023); RealLife data on the workload of cardiac implantable electronic device remote monitoring in a large tertiary center. Pacing Clin Electrophysiol; Sep; 46(9)1109-1115.
5. Sustainable Healthcare Coalition Care Pathways Carbon Footprint calculator Full Calculator | Sustainable Healthcare Coalition Pathways Calculator (shcpathways.org)

Third Party validated by Carbon Action Consultants Limited

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Outcomes from a real ADVANTICS™ Operational Productivity programme from March 2023 to April 2024. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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