



Accuracy of Implantable Loop Recorders:

A multi-centre, multi-device comparison of false positive alert burden in remote transmissions¹

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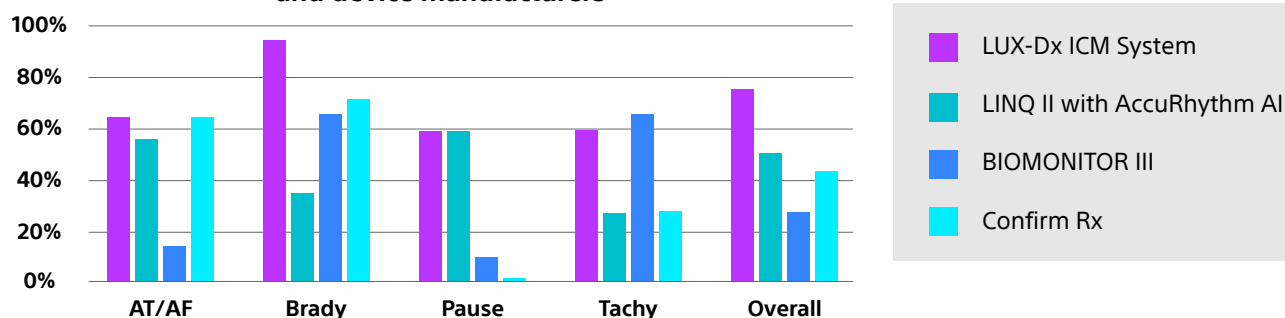
Abstract Overview

An abstract presented by Dr Suraya Hani Kamsani at Heart Rhythm 2024 evaluated real-world arrhythmia detection accuracy across all manufacturers. The abstract specifically evaluated the following ICMs:

- First-generation LUX-Dx™ ICM System (M301) from Boston Scientific
- Medtronic's LINQ II™ with AccuRhythm™ AI
- Biotronik's BIOMONITOR III™ with RhythmCheck
- Abbott's Confirm Rx™ with SharpSense™

A total of 652 patients with 18,665 alerts were randomly selected across multiple centres and analysed for rates of true and false positive transmissions according to device and episode type.

**Alert-level PPV across arrhythmia types
and device manufacturers**



The study found that the first generation ICM from Boston Scientific, the LUX-Dx ICM System (M301), had the highest overall PPV of all the ICMs evaluated.

Learn more about the
findings by reading the
full abstract here:



LUX-Dx II+™ ICM System: Algorithm Enhancements

Focused on what matters.

The LUX-Dx II+ ICM System builds upon the advanced dual-stage algorithms and unparalleled signal quality of the groundbreaking first generation LUX-Dx™ ICM device – adding enhanced detection algorithms and programming options to reduce false positives and prioritise clinically actionable events.

Algorithm enhancements to reduce false positives:

- The enhanced Pause Algorithm includes an additional verification step that further rejects false positives due to low signal-to-noise ratios
 - This enhancement was found to reduce false positives by 49% while maintaining 100% relative sensitivity.^{2*}
- The enhanced AF algorithm includes an additional verification step that identifies sequential heart rate patterns.
 - This enhancement demonstrated a 38% reduction in AF false positives while maintaining high relative sensitivity (>98%).^{3*}

Algorithm enhancements to improve clinic efficiency:

- The LUX-Dx II+ ICM System is the only ICM to offer nighttime programming for both the Brady and Pause Algorithms†, allowing you to tailor detection parameters separately for daytime and nighttime (applied from 11:00pm – 7:00am).
 - Tailored settings for nocturnal episodes were found to reduce 75% of Brady and 57% of Pause S-ECG episodes for review.^{4*}
- The enhanced AF Algorithm merges adjacent AF episodes, reducing the number of episodes for review, which may improve clinic workflow and expedite clinical decision making.
 - Merging adjacent AF episodes was found to reduce 26% of AF S-ECG episodes for review.^{4*}

References

1. Kamsani S, Middeldorp M, Evans S, et al. Accuracy of Implantable Loop Recorders: A Multi-Centre, Multi-Device Comparison of False Positive Alert Burden in Remote Transmissions. Heart Rhythm Journal. 2024; PO-01-021. DOI: <https://doi.org/10.1016/j.hrthm.2024.03.635>
2. Burke M, Ravikumar V, Siejko K, Bohn D, Verdino R. Enhanced Pause Algorithm for Insertable Cardiac Monitor Reduces Clinical Review Burden. Poster presented at 2023 Heart Rhythm Society; May 2023; New Orleans, LA
3. Richards M, Frost K, Mahajan D, Saha S, Herrmann K, Perschbacher D. Novel Run-Test Algorithm for Improved AF Detection in Insertable Cardiac Monitors. Poster presented at 2022 Heart Rhythm Society; April 2022; San Francisco, CA
4. Rajan A, Perschbacher D, Mahajan D, et al. Improving Clinic Workflow and Diagnosis for the LUX-Dx Insertable Cardiac Monitor. Poster Presented at Heart Rhythm Society; April 2022; San Francisco, CA

*Simulated performance tested on real-world LUX-Dx ICM events

†As of 7.20.23: REVEAL LINQ™ Clinician Manual, LINQ II™ Clinician Manual, BIOMONITOR III™ Technical Manual, BIOMONITOR III™ Technical Manual, BIOMONITOR IV™ Technical Manual, Merlin Patient Care System for SJM Confirm™ ICM, Confirm Rx™ ICM and Jot Dx™ ICM Help Manual, Merlin Patient Care System Assert-IQ™ ICM Help Manual

CAUTION: The law restricts these devices to sale by or on the order of a physician. Indications, contraindications, warnings, and instructions for use can be found in the product labelling supplied with each device or at www.IFU-BSCI.com. Products shown for INFORMATION purposes only and may not be approved or for sale in certain countries. This material not intended for use in France.

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