

# Harnessing AI to Combat the Data Deluge from Implantable Loop Recorders

Editorial | AI in RM

In the realm of cardiac healthcare, the role of remote monitoring (RM) of cardiac implantable electronic devices (CIEDs) is pivotal. However, the vast array of alerts generated by these devices poses a significant challenge to the effective and efficient management of cardiac patient care.

A [multicenter study](#) examining the remote monitoring (RM) of cardiac implantable electronic devices (CIEDs) has emphasized the significant alert burden associated with these devices. Over 82,000 alerts were generated over a 12-month period involving 26,713 patients, with implantable loop recorders (ILRs) notably overrepresented in these alert numbers.<sup>1</sup>

ILRs, often used for extended cardiac event monitoring, were responsible for over half of the total alerts. This disproportionate contribution may be due to the sensitivity of ILRs in capturing subclinical arrhythmias and the high frequency of recorded events.

However, addressing the alert burden, particularly the volume generated by ILRs, requires efficient, intelligent solutions. One such solution comes from Implicity's proprietary artificial intelligence algorithm: the ILR ECG Analyzer. This software medical device has been specifically designed to reduce the number of false positives in ECG recordings from patients implanted with Medtronic ILRs.

Data shows that the [ILR ECG Analyzer](#) reduces the number of false positives by an impressive 79% while maintaining a high sensitivity of 99%.<sup>2</sup> By effectively filtering out a significant portion of non-urgent or non-actionable alerts, this technology allows healthcare providers to better focus their attention and resources on truly critical patient and device events.<sup>2</sup>

In addition to improving the efficiency of RM, this reduction in alert burden can also potentially lead to better patient outcomes. As such, the ILR ECG Analyzer is a practical and beneficial application of AI in the healthcare technology sector, aligning with the broader scientific goal of optimizing the management and understanding of data generated through remote cardiac monitoring systems.

<sup>1</sup> O'Shea CJ, Middeldorp ME, Hendriks JM, et al. Remote Monitoring Alert Burden: An Analysis of Transmission in >26,000 Patients. *JACC Clin Electrophysiol.* 2021;7(2):226-234. doi:10.1016/j.jacep.2020.08.029

<sup>2</sup> [https://academic.oup.com/eurheartj/article/42/Supplement\\_1/ehab724.0316/6393406?login=true](https://academic.oup.com/eurheartj/article/42/Supplement_1/ehab724.0316/6393406?login=true)