Real-world Use of Insertable Cardiac Monitor Remote Programming

S. Fareh[1], L. Argenziano[2], F. Scala[3], L. Poggio[4], A. Diamante[5], C. Lavalle[6], D. Gianfrancesco[7], M S. Silvetti[8], D. Porcelli[9], M.Scarano[10], F. Palma[11], P. Charles[1], S. Valsecchi[12], S. Nardi[13]

(1) Croix-Rousse Hospital - HCL, Lyon, France (2) Sanatrix SPA Clinic, Naples, Italy (3) Buon Consiglio Fatebenefratelli Hospital, Naples, Italy (4) ASST Lodi, Lodi, Italy (5) Villa Azzurra -Gesin C.D.C Health Centre, Siracusa, Italy (6) Umberto I Hospital, Cardiovascular Disease, Rome, Italy (7) Andria - L. Bonomo Hospital, Andria, Italy (8) Bambino Gesu Pediatric Hospital, Rome, Italy (9) San Pietro Fatebenefratelli Hospital, Rome, Italy(10) Madonna del Soccorso Hospital, San Benedetto Del Tronto, Italy (11) Monsignor Dimiccoli Hospital, Barletta, Italy (12)Boston Scientific, Milan, Italy (13) Pineta Grande C.D.C Health Centre, Castel Volturno, Italy

Background

Insertable cardiac monitors (ICMs) for continuous arrhythmia monitoring generate high transmission volumes and adds considerable workload for clinics. The novel LUX-Dx™ (Boston Scientific, MA, USA) ICM (Figure 1) allows remote reprogramming of device settings, potentially reducing the need for in-office visits.

Aim

This study aimed to characterize the real-world use of remote reprogramming during its initial commercialization in Europe and to assess its impact on ICM transmission burden.

Methods

De-identified data were collected from LATITUDE Clarity Data Management System across 23 European centers.

Figure 1: LUX-Dx ICM

Results

A total of 697 patients (56% male, mean age 64±18 years) were followed for a median of 9 months [IQR: 4-13] . The primary indications for ICM were syncope (333 patients, 48%) and suspected atrial fibrillation (116 patients, 17%).

Transmissions

Over observation period, 18,668 device transmissions were received (3.0 per patient-month) (Figure 2). Transmission rates varied by indication, from 2.1 per patient-month for ventricular tachycardia to 4.3 per patient-month for palpitations (p <0.001) and Table 1)

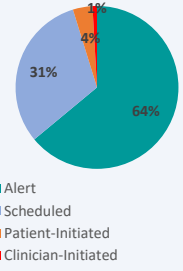

Figure 2: Transmissions

	Transmissions /patient-month (95% CI)
Cryptogenic Stroke	**2.4 (2.3-2.6)**
Other	**2.9 (2.7-3.1)**
Palpitations	**4.3 (4.1-4.5)**
Suspected AF	**2.2 (2.1-2.3)**
Syncope	**3.4 (3.3-3.5)**
Ventricular Tachycardia	**2.1 (1.9-2.2)**

AF: Atrial fibrillation

Table 1: Transmissions rate by indication

Reprogramming

A total of 401 reprogramming events occurred in 230 ICMs (0.8 per patient-year), with 156 events (39%) performed remotely.

The time to first reprogramming varied by clinical indication (Figure 3)

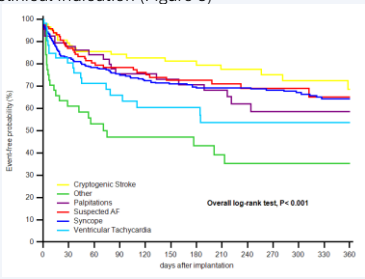

Figure 3: Time to the first reprogramming by indication

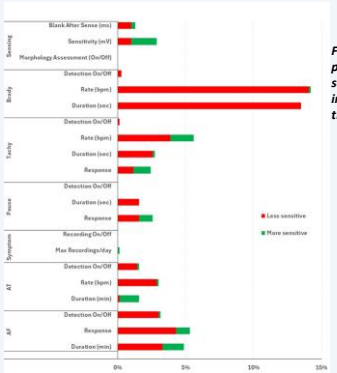

Figure 4: Percentage of patients with parameter settings changed from implantation programming to the last transmission

The vast majority of changes were in the direction of a lower detection sensitivity, i.e. more stringent alert criteria, and most frequently involved the parameters for bradycardia detection

Transmissions reduction

A paired analysis showed a median transmission rate reduction of 57% after reprogramming (P<0.001). (Figure 5)

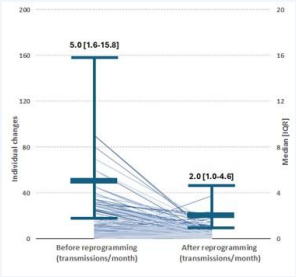

Figure 5: Rates of transmissions before and after reprogramming

Conclusions

- In this initial experience with the LUX-Dx™ ICM, **transmission volume during follow-up was manageable** and closely associated with the patient's clinical profile.
- The **transmission burden could be reduced** by approximately 31% by eliminating scheduled transmissions, following an alert-based strategy, as recommended by recent remote monitoring guidelines.
- **Reprogramming reduced transmission review workload by 57%,** and the remote reprogramming feature—currently used in 39% of cases—holds potential for broader adoption to optimize device management.
- This function could enhance workflow efficiency and ease resource demands for both clinics and patients by **reducing the need for in-office visits**.

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. ©2025 Boston Scientific Corporation or its affiliates. All rights reserved.

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