

## CASO CLINICO 1

- V.M., uomo di 71 anni.
- Cardiopatia valvolare ed ischemica ad evoluzione ipocinetica portatore di protesi meccanica aortica.
- Storia di TV sostenute, ICD bicamerale dal 2005, plurime recidive nonostante AADs, eseguite 5 ablazioni di TV dal 2010 al 2022. Per peggioramento della classe funzionale nel 3/2020, FE 33%, eseguito upgrading a CRTD. Attivato monitoraggio remoto.

Telemedicina applicata al monitoraggio dei dispositivi medici impiantabili

Telemedicina in Cardiologia

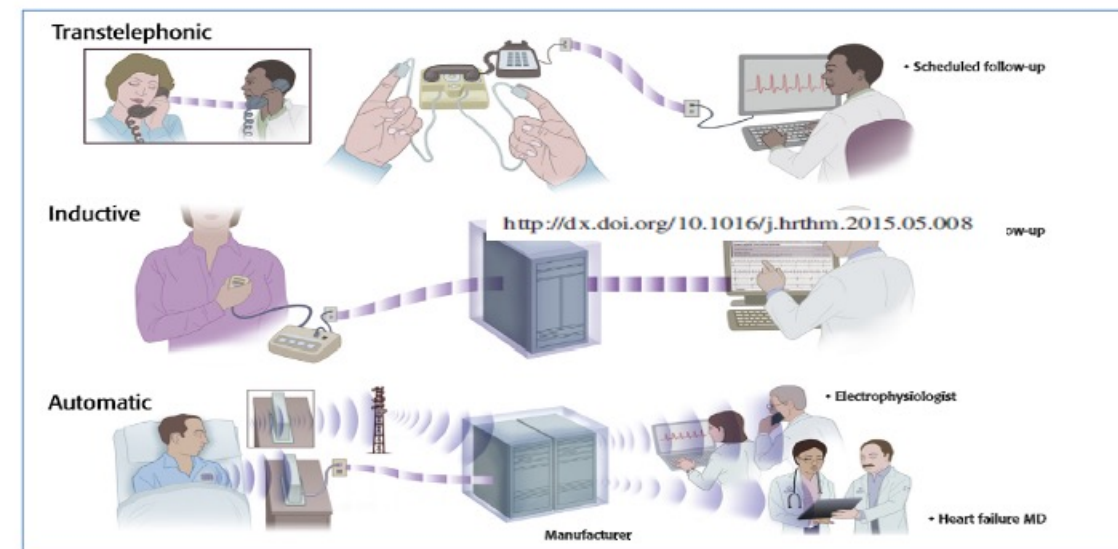
**Linee Guida internazionali sul monitoraggio  
remoto di dispositivi cardiaci impiantabili**

Claudia Amellone S.S. Elettrofisiologia Osp. Maria Vittoria-Martini Torino





**HRS Expert Consensus Statement on remote interrogation and monitoring for cardiovascular implantable electronic devices**



**Criticità:**

- Collaborazione pz, appuntamento con personale, dati tecnici
- Collaborazione pz, nessun dato tra un controllo e il successivo
- nessuna azione del pz, dati tecnici e clinici, reazione "real time" ad eventi



**MicroPort™**

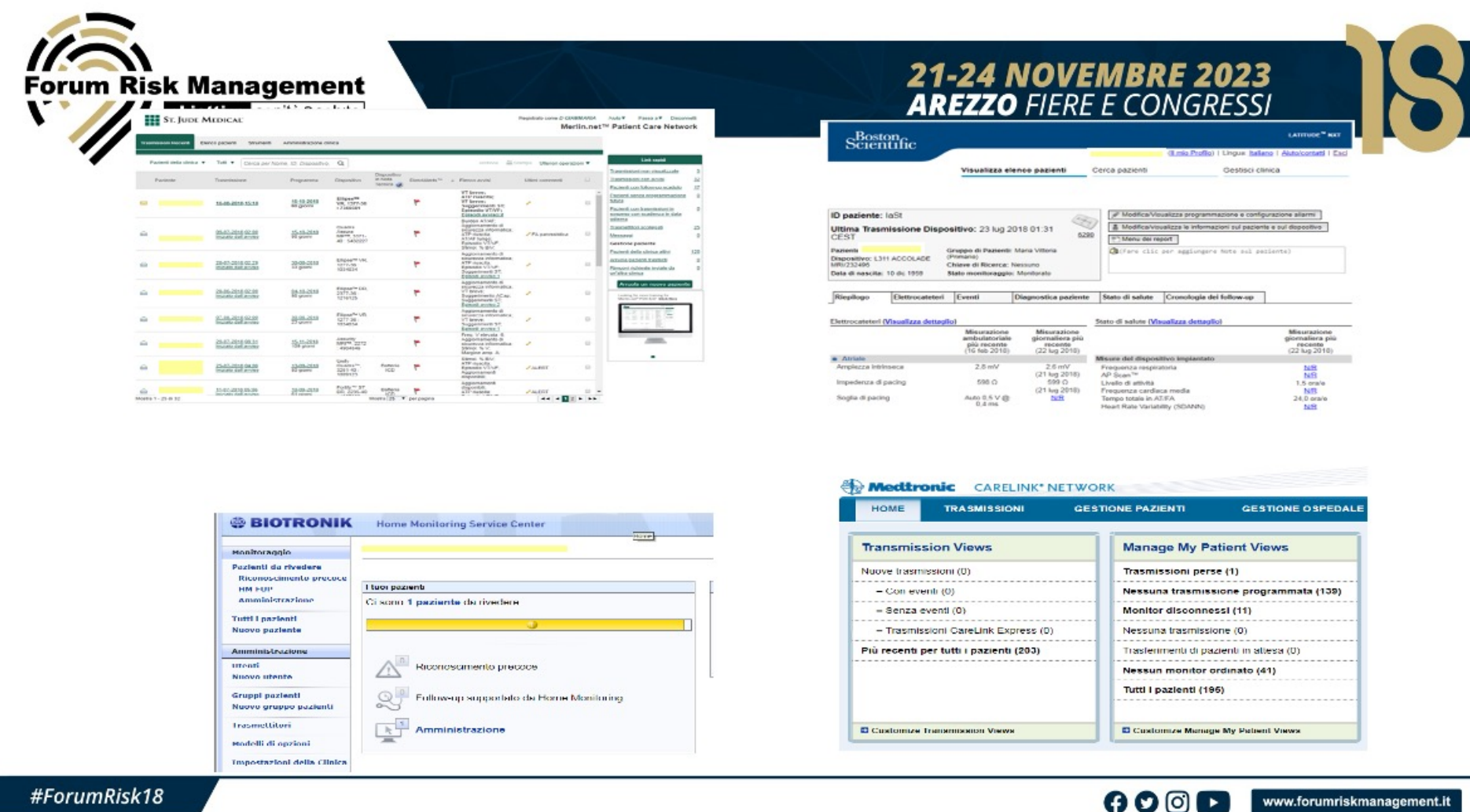


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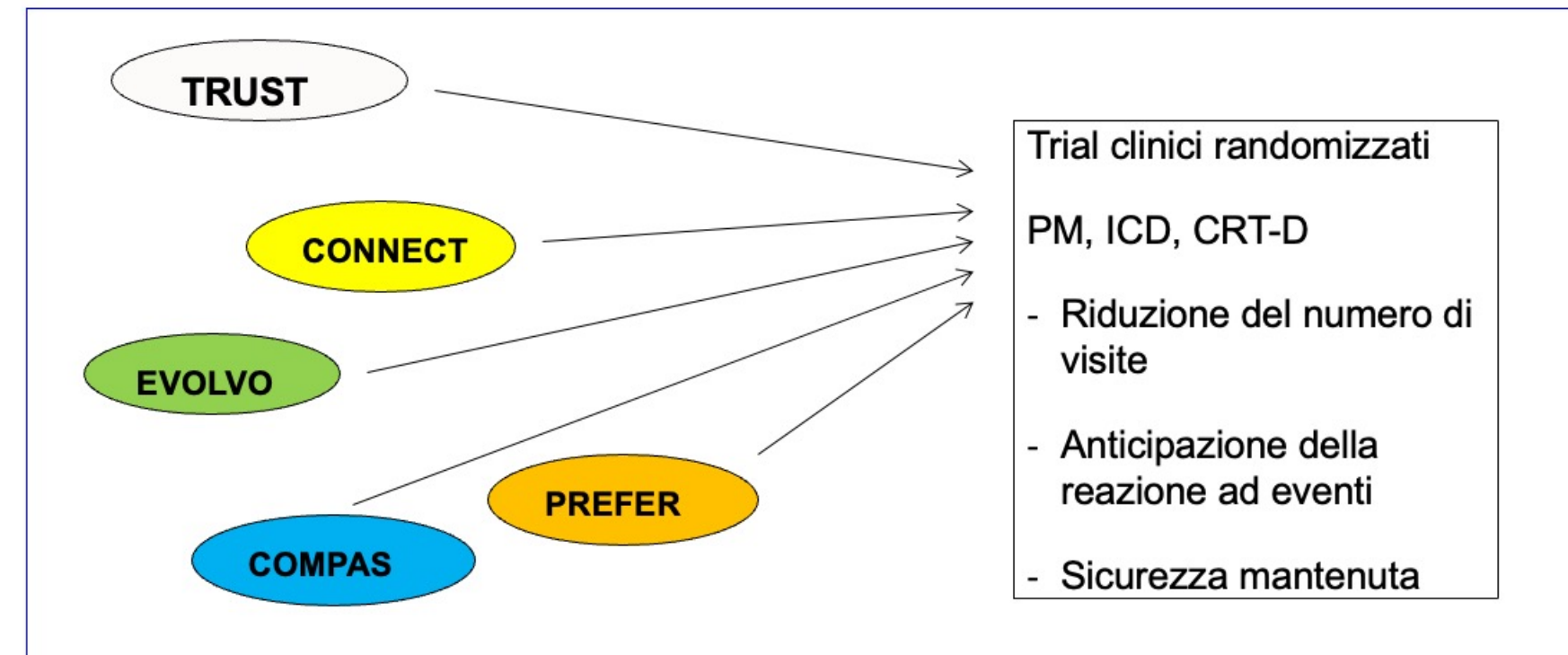
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### Controllo remoto dei dispositivi: ILR, Pace maker, Defibrillatori

- Controllo dei dati tecnici
- Controllo degli eventi clinici aritmici
- Controllo dello stato di salute e di compenso



The screenshot displays the Forum Risk Management interface, which is a web-based platform for patient monitoring and risk management. It features a navigation menu on the left with options like 'Pazienti da rilevare', 'Riconoscimento precoce', and 'Amministrazione'. The main content area is divided into several sections: a table of patient data, a detailed patient profile for 'Ultimo Trasmissione Dispositivo: 23 lug 2019 01:31', and a 'Transmission Views' section showing 'Nuove trasmissioni (0)', 'Casi eventi (0)', and 'Pazienti CareLink Express (0)'. The interface is branded with the Biotronic logo and includes social media icons and the website URL 'www.forumriskmanagement.it' at the bottom.







**Triage-HF Plus: a novel device-based remote monitoring pathway to identify worsening heart failure**

Fozia Zahir Ahmed<sup>1,2\*</sup>, Joanne K. Taylor<sup>1,2,3</sup>, Caroline Green<sup>1</sup>, Lucy Moore<sup>1</sup>, Angelic Goode<sup>4</sup>, Paula Black<sup>4</sup>, Lesley Howard<sup>4</sup>, Catherine Fullwood<sup>5,6</sup>, Amir Zaidi<sup>1</sup>, Alison Seed<sup>4</sup>, Colin Cunnington<sup>1,2</sup> and Manish Motwani<sup>1,2</sup>

**Implant-based multiparameter telemonitoring of patients with heart failure (IN-TIME): a randomised controlled trial**

Gerhard Hindricks, Milos Taborsky, Michael Glikson, Ullus Heinrich, Burghard Schumacher, Amos Katz, Johannes Brachmann, Thorsten Lewalter, Andreas Goette, Michael Block, Josef Kautzner, Stefan Sack, Daniela Husser, Christopher Plonkowski, Peter Sogaard, for the IN-TIME study group\*

**A Multisensor Algorithm Predicts Heart Failure Events in Patients With Implanted Devices**

Results From the MultiSENSE Study

John P. Boehmer, MD,<sup>a</sup> Ramesh Hariharan, MD,<sup>b</sup> Fausto G. Devecchi, MD,<sup>c</sup> Andrew L. Smith, MD,<sup>d</sup> Giulio Molon, MD,<sup>e</sup> Alessandro Capucci, MD,<sup>f</sup> Qi An, PhD,<sup>g</sup> Viktoria Averina, PhD,<sup>h</sup> Craig M. Stolen, PhD,<sup>i</sup> Pramodsingh H. Thakur, PhD,<sup>j</sup> Julie A. Thompson, PhD,<sup>k</sup> Ramesh Warier, PhD,<sup>l</sup> Yi Zhang, PhD,<sup>m</sup> Jagmeet P. Singh, MD, DPM<sup>n</sup>



**Combining home monitoring temporal trends from implanted defibrillators and baseline patient risk profile to predict heart failure hospitalizations: results from the SELENE HF study**

Antonio D'Onofrio<sup>1\*</sup>, Francesco Solimene<sup>2</sup>, Leonardo Calò<sup>3</sup>, Valeria Calvi<sup>4</sup>, Miguel Viscusi<sup>5</sup>, Donato Melissano<sup>6</sup>, Vitantonio Russo<sup>7</sup>, Antonio Rapacciuolo<sup>8</sup>, Andrea Campana<sup>9</sup>, Fabrizio Caravati<sup>10</sup>, Paolo Bonfanti<sup>11</sup>, Gabriele Zanotto<sup>12</sup>, Edoardo Gronda<sup>13</sup>, Antonello Vado<sup>14</sup>, Vittorio Calzolari<sup>15</sup>, Giovanni Luca Botto<sup>16</sup>, Massimo Zecchin<sup>16</sup>, Luca Bontempi<sup>17</sup>, Daniele Giacomelli<sup>18</sup>, Alessio Gargaro<sup>18</sup>, and Luigi Padeletti<sup>19</sup>

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[f](#) [t](#) [i](#) [v](#) [www.forumriskmanagement.it](#)



**2021 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy**

**Recommendations for pacemaker and cardiac resynchronization therapy-pacemaker follow-up**

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Remote device management is recommended to reduce the number of in-office follow-ups in patients with pacemakers who have difficulties to attend in-office visits (e.g. due to reduced mobility or other commitments, or according to patient preference). <sup>805,806,809</sup>	I	A
Remote monitoring is recommended in the case of a device component that has been recalled or is on advisory, to enable early detection of actionable events in patients, particularly those who are at increased risk (e.g. in the case of pacemaker dependency).	I	C
In-office routine follow-up of single- and dual-chamber pacemakers may be spaced by up to 24 months in patients on remote device management. <sup>805,806</sup>	IIa	A
Remote device management of pacemakers should be considered in order to provide earlier detection of clinical problems (e.g. arrhythmias) or technical issues (e.g. lead failure or battery depletion). <sup>806,810</sup>	IIa	B

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**Table 13** Frequency of follow-up for routine pacemaker and cardiac resynchronization therapy, either in person alone or combined with remote device management

	In-office only	In-office + remote
All devices	Within 72 h and 2–12 weeks after implantation	In-office within 72 h and 2–12 weeks after implantation
CRT-P or HBP	Every 6 months	Remote every 6 months and in-office every 12 months <sup>a</sup>
Single/dual-chamber	Every 12 months then every 3–6 months at signs of battery depletion	Remote every 6 months and in-office every 18–24 months <sup>a</sup>

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## 2023 HRS/EHRA/APHRS/LAHRs expert consensus statement on practical management of the remote device clinic

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<https://doi.org/10.1016/j.hrthm.2023.03.1525>

Term	Definition
<b>Programmer</b>	A manufacturer-specific device designed to receive and transmit information from CIEDs and allow temporary and permanent programming of CIEDs.
<b>Device interrogation</b>	Data transmission from the CIED to the programmer, including device settings and data stored in the CIED memory. The data can be viewed and stored directly on the programmer or transformed to a report that can be exported to a computer, dedicated CIED follow-up software, and internet servers.
<b>Device programming</b>	Bidirectional telemetry allowing the programmer operator to assess CIED function, select CIED settings, and optimize system performance tailored to the individual patient's condition in a noninvasive and reversible manner.
<b>Home monitor</b>	Remote telemetry device, either a strategically positioned device in the proximity of the patient or a smartphone-based application, able to communicate with the CIED, which serves as a substation to transmit the encrypted data to dedicated servers.
<b>Remote monitoring (RM)</b>	Automated remote transmissions of predefined alerts related to clinical events (eg, ICD therapies) or related to device functioning (eg, lead integrity alerts).
<ul style="list-style-type: none"> <li>• <b>Individual-based RM</b></li> <li>• <b>Site-based RM</b></li> </ul>	RM where the manufacturer-specific transmitter is assigned to an individual patient at enrollment. RM where the manufacturer-specific transmitter is assigned to a specific site and could be used to collect device data for many individual patients (even if they are not individually enrolled).

Term	Definition
<b>RM platform</b>	Manufacturer-specific remote web-based communication system allowing access to the encrypted data transmission from the home monitor to individual clinic and/or third-party resources.
<b>Third-party resources</b>	External services available using manufacturer-specific RM systems to collect and communicate patient data. This could be software based, which collates data, or personnel based, which can outsource some of the clinics' work.
<b>Scheduled transmission</b>	Programmable scheduled transmissions during which routine CIED parameters are collected remotely from the RM platform by members of the remote device clinic team in a format like that obtained during a routine in-person clinic visit.
<b>Nonscheduled transmission</b>	
• <b>Patient-initiated interrogation</b>	Nonscheduled data transmission initiated by the patient due to experiencing real or perceived clinical events, for which the patient is seeking expert evaluation.
• <b>Alert-initiated Interrogation</b>	Nonscheduled data transmission initiated by predefined programmed parameters for alerting the clinic of a potentially actionable event.
<b>Actionable event</b>	Device-related or clinical event that requires intervention prior to the next scheduled in-person clinic visit.
<b>Continuous connectivity</b>	Continuous data collection within the device with automatic transmission using manufacturer-specific transmission frequency, which often occurs once daily. While the data collection is continuous, the transmissions and monitoring are not continuous.
<b>Noncontinuous monitoring</b>	Noncontinuous data collection requiring manual transmission using manufacturer-specific transmission either scheduled by the clinic or initiated by the patient.

Recommendations for RM considerations			
COR	LOE	Recommendations	References
1	A	1. In patients with CIEDs, RM is recommended as part of the standard of care.	1,11,30-38
1	B-R	2. In patients with CIEDs on RM, routine surveillance of lead function and battery status is recommended to ensure device integrity.	30,39,40
1	C-E0	3. In patients with CIEDs on RM with a device capable of continuous connectivity, connectivity should be maintained.	



Recommendations for RM payment/reimbursement models

COR	LOE	Recommendations	References
1	B-NR	1. For the care of patients with CIEDs on RM, it is recommended that health care payers adopt adequate reimbursement for RM that is tailored to regional health system care patterns and facilitates sustainable and cost-effective CIED follow-up care.	35,57-60,62,66,79-89

**Current status of reimbursement practices for remote monitoring of cardiac implantable electrical devices across Europe**

Giuseppe Boriani <sup>1,2,3</sup>, Haran Burri <sup>4</sup>, Emma Svennberg <sup>5</sup>, Jacopo Francesco Imberti <sup>1,5</sup>, José Luis Merino <sup>6</sup>, and Christophe Leclercq <sup>7</sup>

<https://doi.org/10.1093/eupace/euac118>

Country	Reimbursement tariff for in-clinic device check	Reimbursement tariff for remote CIED management	Reimbursement specific for hardware and services for remote monitoring	Reimbursement tariff for HF disease management
Austria	Yes	No	No	Yes, from 2022
Belgium	Yes	No	No	No
Bulgaria	No	No	No	No
Czech Republic	Yes	Yes	Yes	No
Denmark	Yes	Yes	No	No
Finland	Yes	Yes	Yes	No
France	Yes	Yes <sup>a</sup>	Yes <sup>b</sup>	No
Germany	Yes	Yes <sup>c</sup>	Yes for some health insurance	No
Hungary	Yes	Yes	No	No
Italy	Yes	Yes (in 10 of 20 regional health services)	No	No
Norway	Yes	Yes	No	No
Poland	No	No	No	No
Portugal	Yes	Yes	No	Yes
Russia	No	No	No	No
Slovakia	No	No	No	No
Spain	Funded, no tariff	Funded, no tariff	N/A	No
Sweden	Yes	Yes	No	No
Switzerland	Yes	Yes	Yes	Yes
The Netherlands	Yes	Yes	No	Yes <sup>d</sup>
UK	Yes	Not at a national level, it is dependent on Clinical Commissioning Groups and NHS Trusts	Ordered by NHS Trusts	No

DRG: riconoscimenti diversi, burocrazia, difficoltosa implementazione



**Legenda**

- regioni che hanno ottenuto il rimborso
- regioni che non hanno ancora ottenuto il rimborso

- Provincia autonoma di Trento
- Veneto
- Friuli Venezia Giulia
- Piemonte
- Toscana
- Lazio
- Emilia Romagna
- Marche
- Liguria
- Puglia

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PROVINCIA AUTONOMA DI TRENTO

I	89.48.2	CONTROLLO IN REMOTO DI PAZIENTI PORTATORI DI PACEMAKER, DEFIBRILLATORE E LOOP RECORDER. Massimo 4 controlli/anno (2)	25,55	CARDIOLOGIA
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13/6/2016

Trentino: Ampia diffusione, organizzazione e riconoscimento  
 Trento e Rovereto

Alto Adige: Bolzano, non riconoscimento DRG

Veneto

DELIBERAZIONE DELLA GIUNTA REGIONALE n. 478 del 23 aprile 2019  
Inserimento nel Nomenclatore Tariffario della specialistica ambulatoriale di una nuova prestazione della branca 8 Cardiologia ed estensione del numero di prestazioni della stessa branca erogabili in regime di esenzione alla compartecipazione della spesa sanitaria.  
*[Sanità e igiene pubblica]*

CODICE	PRESTAZIONE	TARIFFA
89.50.2	CONTROLLO IN REMOTO DI PAZIENTI PORTATORI DI PACEMAKER, DEFIBRILLATORE E LOOP RECORDER (ciclo di 4 controlli). Massimo 4 controlli/anno	€ 25,55

- REGIONE PIEMONTE BU44 29/10/2020
- Deliberazione della Giunta Regionale 16 ottobre 2020, n. 13-2103.

Codice Catalogo Regionale: 89502

**CONTROLLO IN REMOTO DI PAZIENTI PORTATORI DI PACEMAKER, DEFIBRILLATORE, LOOP RECORDER E CCM (ciclo di 4 controlli/Anno) -**  
Codice Prestazione: 89.50.2


Frequenza: Pazienti portatori di PM/ICD non più di una ricetta all'anno;  
Pazienti portatori di Loop recorder non più di tre ricette all'anno. -

Tariffa: € 23,20



## Lazio

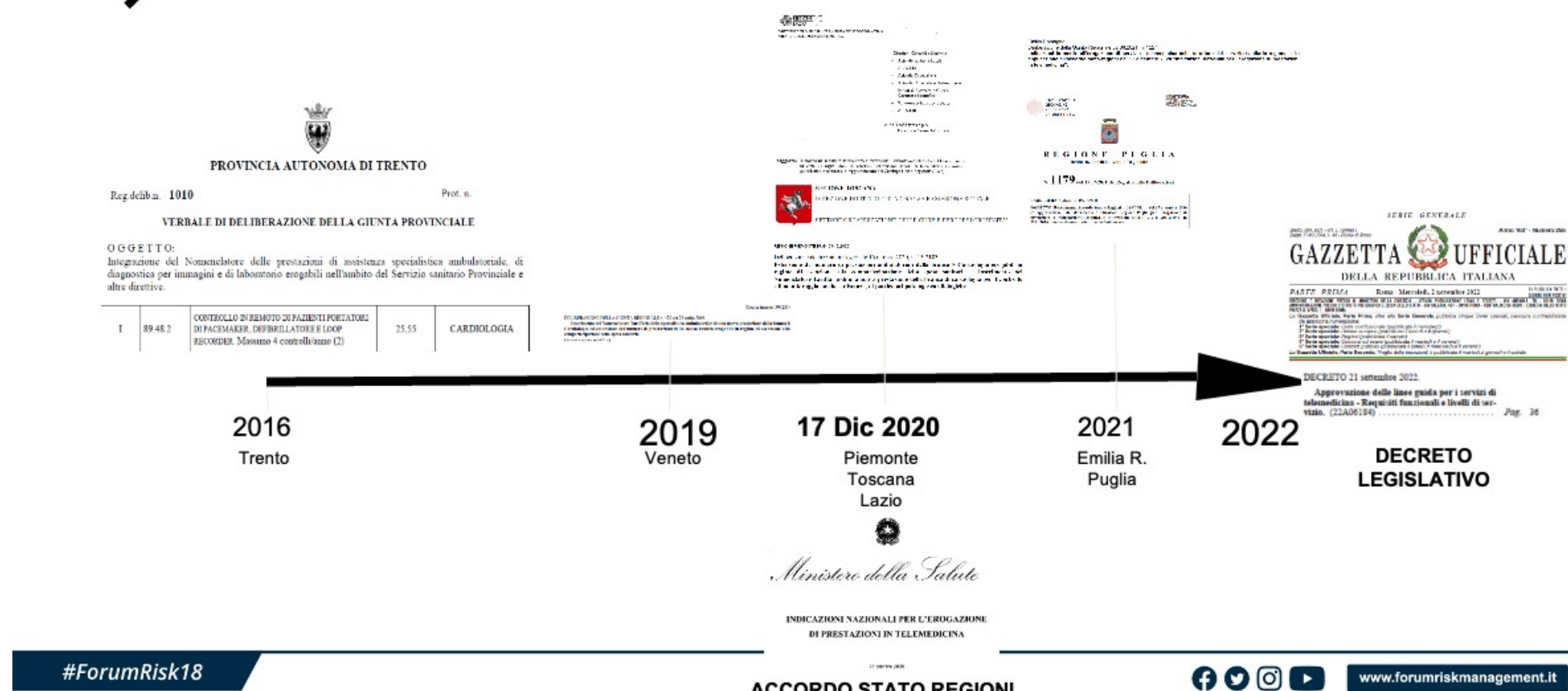
DRG per "Televisita" che comprende anche i controlli remoti dei devices ma solo se associati ad una televisita, senza limitazioni di numero di prestazioni/anno e per un importo di 20 E a prestazione

 <b>REGIONE MARCHE</b> GIUNTA REGIONALE DELIBERAZIONE DELLA GIUNTA REGIONALE ADUNANZA N. 330 LEGISLATURA N. X	<table border="1"><tr><td>seduta del</td><td>5/05/2020</td></tr><tr><td>delibera</td><td>523</td></tr></table>	seduta del	5/05/2020	delibera	523
seduta del	5/05/2020				
delibera	523				

Delibera che equipara controllo ambulatoriale e controllo remoto

1 controllo: 1 DEMA





The timeline illustrates the legislative evolution of remote care reimbursement in Italy:

- 2016 (Trento):** Verbal of the Provincial Council of Trento (Reg. delib. n. 1910) regarding the integration of specialist ambulatory services and diagnostic services in the Provincial Health Service.
- 2019 (Veneto):** Legislative Decree n. 100 (L. 100/2019) regarding the integration of specialist ambulatory services and diagnostic services in the Provincial Health Service.
- 17 Dic 2020 (Piemonte, Toscana, Lazio):** Ministerial Decree n. 100 (M.D. 100/2020) regarding the integration of specialist ambulatory services and diagnostic services in the Provincial Health Service.
- 2021 (Emilia R., Puglia):** Regional Decree n. 100 (R.D. 100/2021) regarding the integration of specialist ambulatory services and diagnostic services in the Provincial Health Service.
- 2022:** Legislative Decree n. 100 (L. 100/2022) regarding the integration of specialist ambulatory services and diagnostic services in the Provincial Health Service.

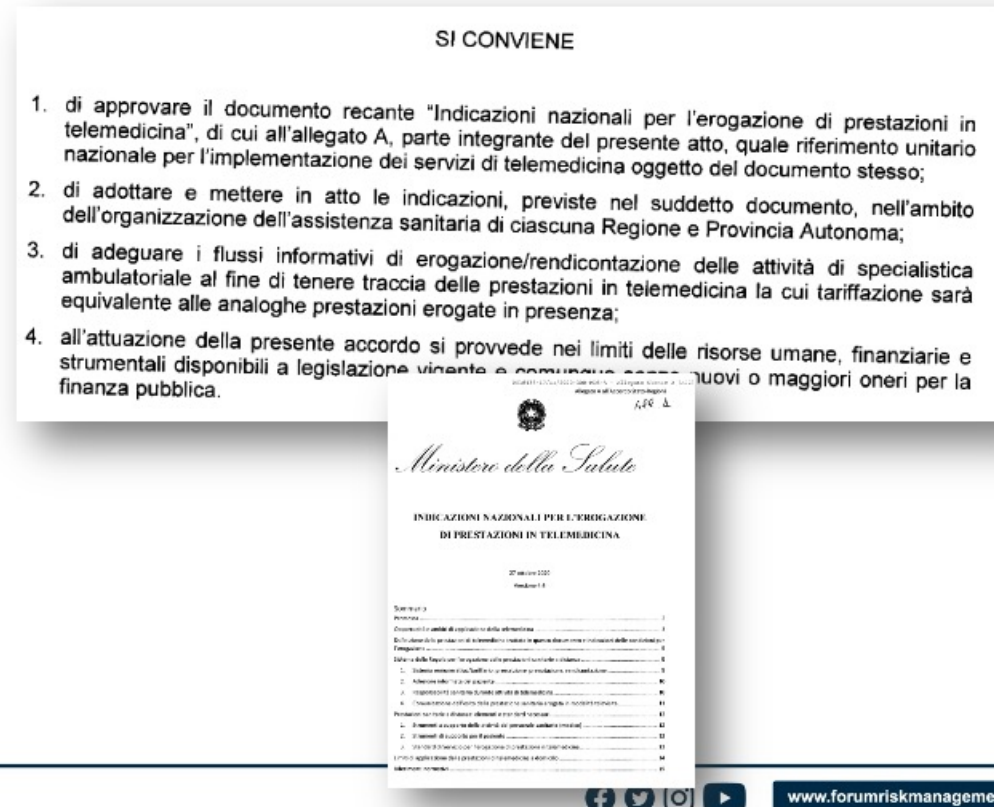
Accordo Stato Regioni

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**COSA SANCISCE ACCORDO**

- Approvare il Documento «Indicazioni Nazionali per l'erogazione dei servizi in telemedicina»;
- Mettere in atto il Documento in tutte le Regioni e Province Autonome
- Adeguare i flussi informativi di erogazione attività ambulatoriale al fine di tenere traccia delle prestazioni in telemedicina la cui tariffazione sarà equivalente alle analoghe prestazioni erogate in presenza





I principi fondamentali su cui si basa il SSN dalla sua istituzione, avvenuta con la [legge n.833 del 1978](#), sono l'universalità, l'uguaglianza e l'equità.

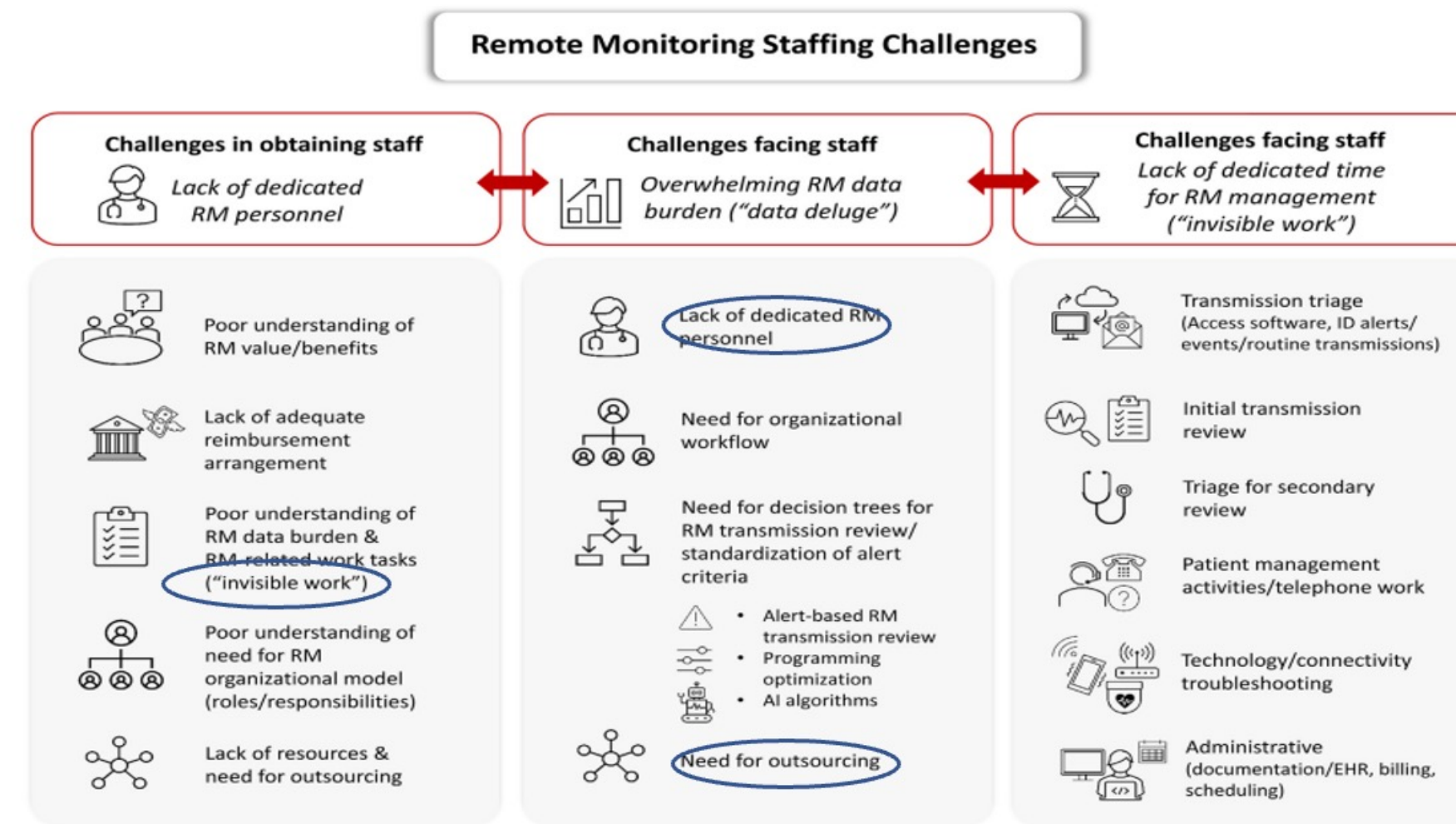
Universalità: estensione delle prestazioni sanitarie a tutta la popolazione

Uguaglianza: i cittadini devono accedere alle prestazioni del SSN senza nessuna distinzione di condizioni individuali, sociali ed economiche



Equità: a tutti i cittadini deve essere garantita parità di accesso in rapporto a uguali bisogni di salute

Recommendations for staffing requirements for RM			
COR	LOE	Recommendations	References
1	B-NR	1. For the care of patients with CIEDs on RM, a team-based organizational model with formal policies, procedures, and clear definitions of the roles and responsibilities of qualified staff is recommended to optimize all related RM tasks.	1,25,28,29,53,90,102-109
1	B-NR	2. For the care of patients with CIEDs on RM, it is recommended that there is adequate dedicated time to perform all RM tasks, including scheduled and nonscheduled transmissions, patient follow-up, and administrative tasks.	25,28,57,104,106,110
1	B-NR	3. For the care of patients with CIEDs on RM, it is recommended that the staff-to-patient ratios in RM clinics reflect the increasing unscheduled transmission workload.	3,28,59,111,112
2a	C-LD	4. For the care of patients with CIEDs on RM, it is reasonable for clinics to have a minimum of 3.0 full-time equivalents per 1000 patients on RM, comprising both clinical and administrative staff.	27

Grande rilevanza degli aspetti organizzativi, infrastrutture, staff, workflow, CIED team



**2023 HRS Guidelines: Task Based (Implications for Staffing)**

Task	Issues Under Evolution
<p><b>Connectivity/Troubleshooting</b></p> <ul style="list-style-type: none"> <li>• Appointments</li> <li>• Connectivity</li> <li>• Patient questions</li> </ul>	 <b>Ancillary staff</b>
<p><b>Patient Education/Enrollment</b></p> <ul style="list-style-type: none"> <li>• What is remote monitoring?</li> <li>• Why is it needed?</li> <li>• Choice of monitor</li> </ul>	 <b>APP RN or Device Tech</b>

**CIED Data Triage & Review**

- Website monitoring
- Initial data processing
- Initial communication with health care team



**Data Triage & Review, options:**

- Third-party software
  - Single web-based data portal
  - Device and patient management



**Final Sign-Off**

- Final interpretation
- Final communication with health care team
- Documentation for billing

**Alert Management**

- Patient calls
- In-office evaluations
- Charting and communication



Physician,  
APP/  
Physiologist

**Final sign-off**

- Interpretation (middleware vs in-EHR)
- Information interoperability (between EHRs)
- Closing the loop with patients

**Alert Management**

- In-office CIED management
- Hospital-based remote CIED interrogations
- After-hours alert management

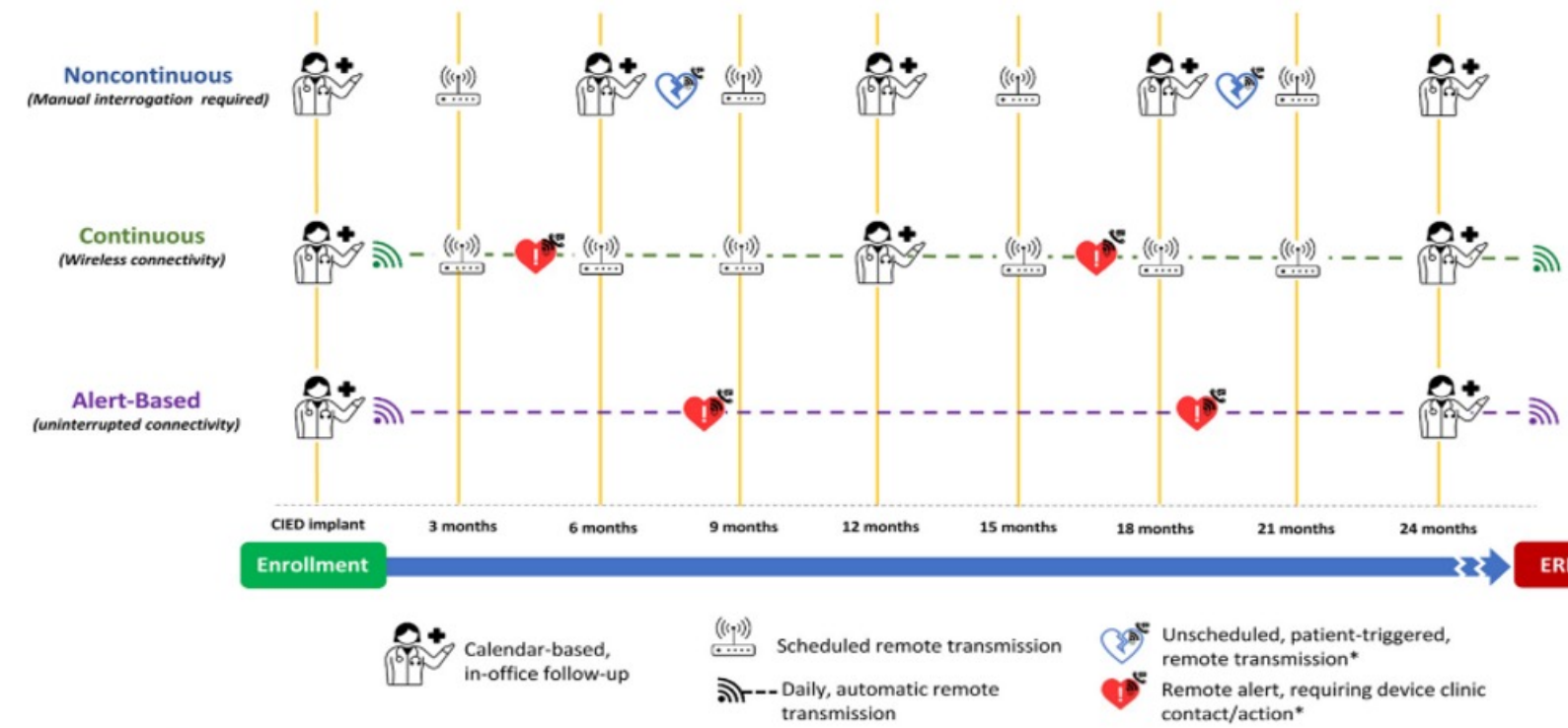
## Formazione del personale

Recommendations for staff credentialing and qualifications for RM			
COR	LOE	Recommendations	References
1	C-E0	1. For the care of patients with CIEDs on RM, it is recommended that clinical providers who independently prescribe, interpret, and document RM possess appropriate education and/or certification.	
1	C-E0	2. For the care of patients with CIEDs on RM, it is recommended that clinics regularly conduct quality improvement reviews to support current evidence-based standards.	

Certificazioni EHRA, IBHRE, AIAC  
 Progetto HANDS ON

**Recommendations for devices with noncontinuous RM**

COR	LOE	Recommendations	References
1	C-E0	1. In patients with CIEDs on RM in the absence of continuous connectivity, remote transmissions are recommended at least every 3-12 months for PMs and every 3-6 months for ICDs.	
1	C-E0	2. In patients with CIEDs on RM in the absence of continuous connectivity, as the device approaches elective replacement, the frequency of remote transmissions should be increased to every 1-3 months.	





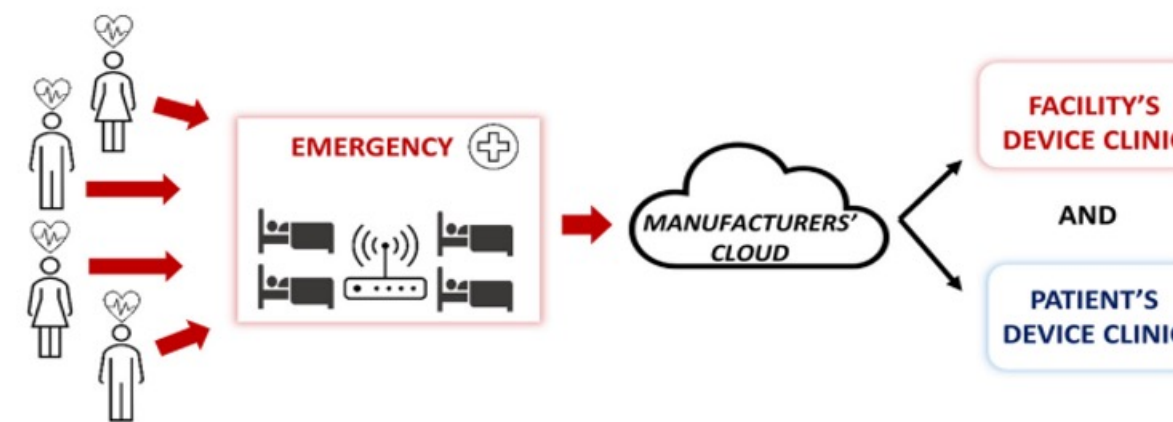
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18

Traditional remote monitoring with *personal* transmitter



*Site-based* remote monitoring with *shared* transmitter

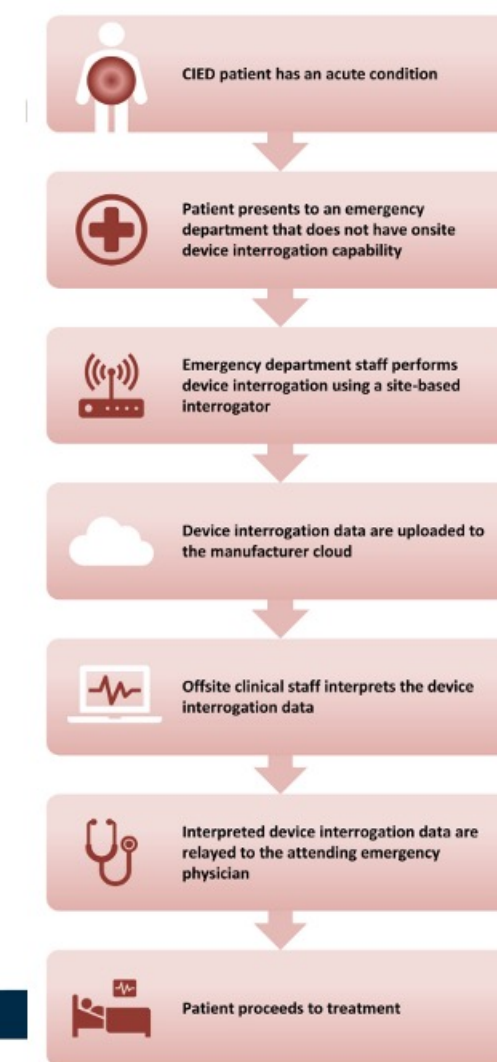


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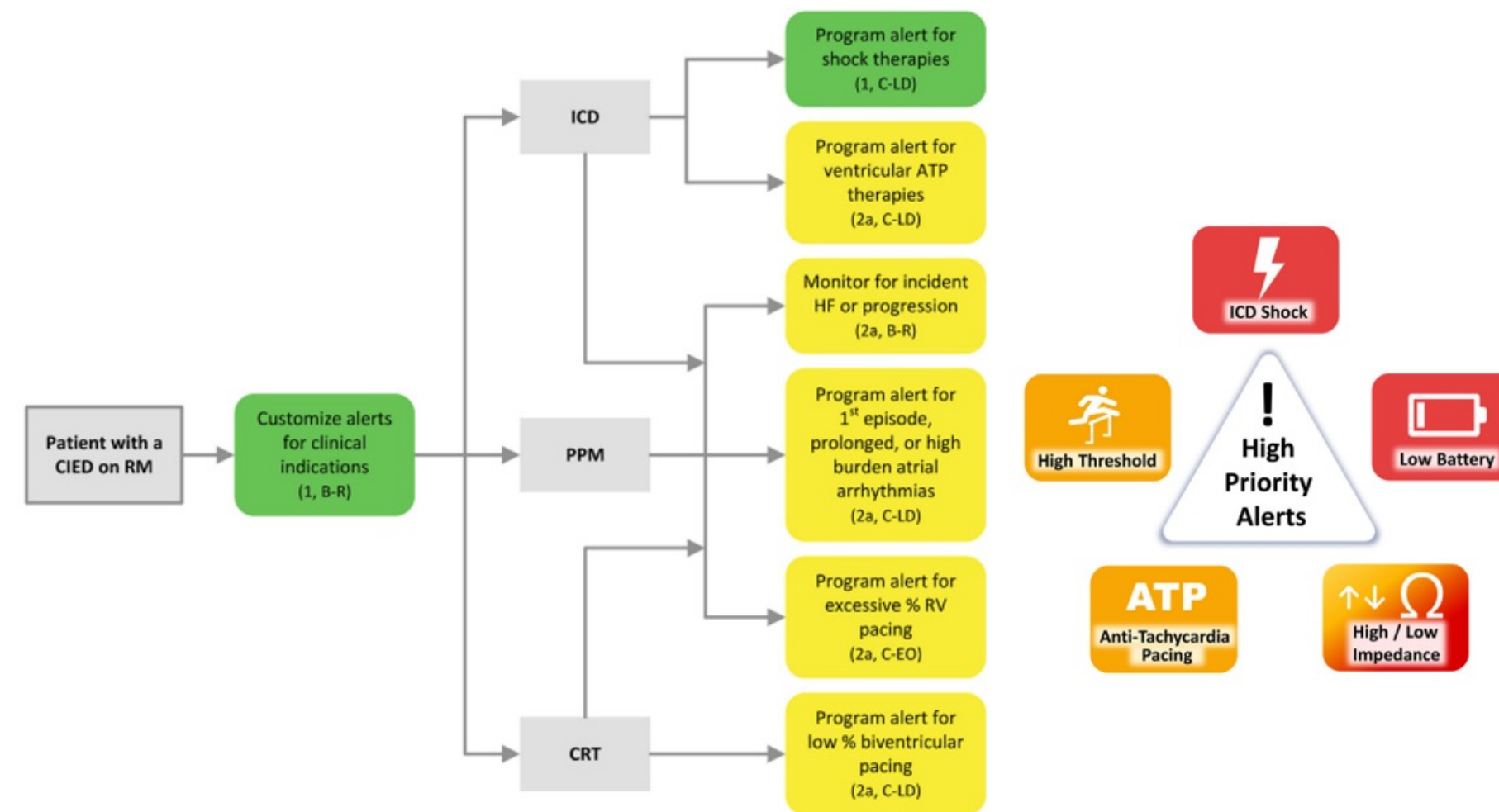




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Recommendations for alert-based RM			
COR	LOE	Recommendations	References
1	B-R	1. In patients with CIEDs and a component with a safety advisory, it is recommended that continuous connectivity be added to scheduled remote or in-person interrogation to enable early detection of actionable events.	18,29,31,32,35,39,42,123,124
2a	B-R	2. In patients with PMs on RM with consistent and continuous connectivity, and in the absence of recent alerts or other cardiac comorbidity, it is reasonable to schedule in-person visits every 24 months.	37,125,126
2a	B-R	3. In patients with ICDs on RM with consistent and continuous connectivity, and in the absence of recent alerts or other cardiac comorbidity, it is reasonable to schedule in-person visits every 24 months.	31,35,57,92,98



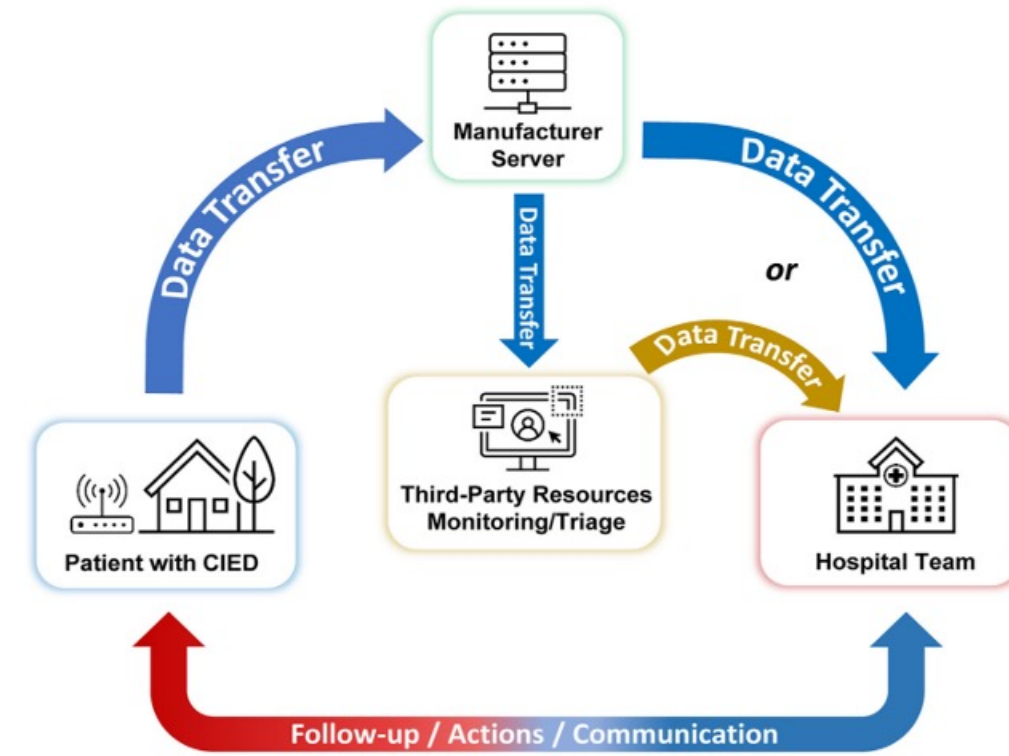


**Recommendations for timeline recommendations for alert management**

COR	LOE	Recommendations	References
1	C-E0	1. For the care of patients with CIEDs on RM, it is recommended that patients and their caregivers be informed that automatic alerts transmitted by RM do not substitute for an emergency management system.	
2a	C-E0	2. For the care of patients with CIEDs on RM, it is reasonable for clinics to review and react to high-priority alerts within 1 business day.	

**Recommendations for communication of the RM report to patients**

COR	LOE	Recommendations	References
2a	C-E0	1. For the care of patients with CIEDs on RM, it is reasonable for the results of all remote device transmissions to be shared with patients, based on patient preferences for content and mode of communication, and clinic workflows.	



Modelli organizzativi

Recommendations for use of third-party resources in RM

COR	LOE	Recommendations	References
2a	C-E0	1. For the care of patients with CIEDs on RM, it is reasonable to use third-party resources to alleviate RM workload for staff.	
2a	C-E0	2. For the care of patients with CIEDs on RM, it is reasonable to inform patients about the use of third-party resources to facilitate patient care.	

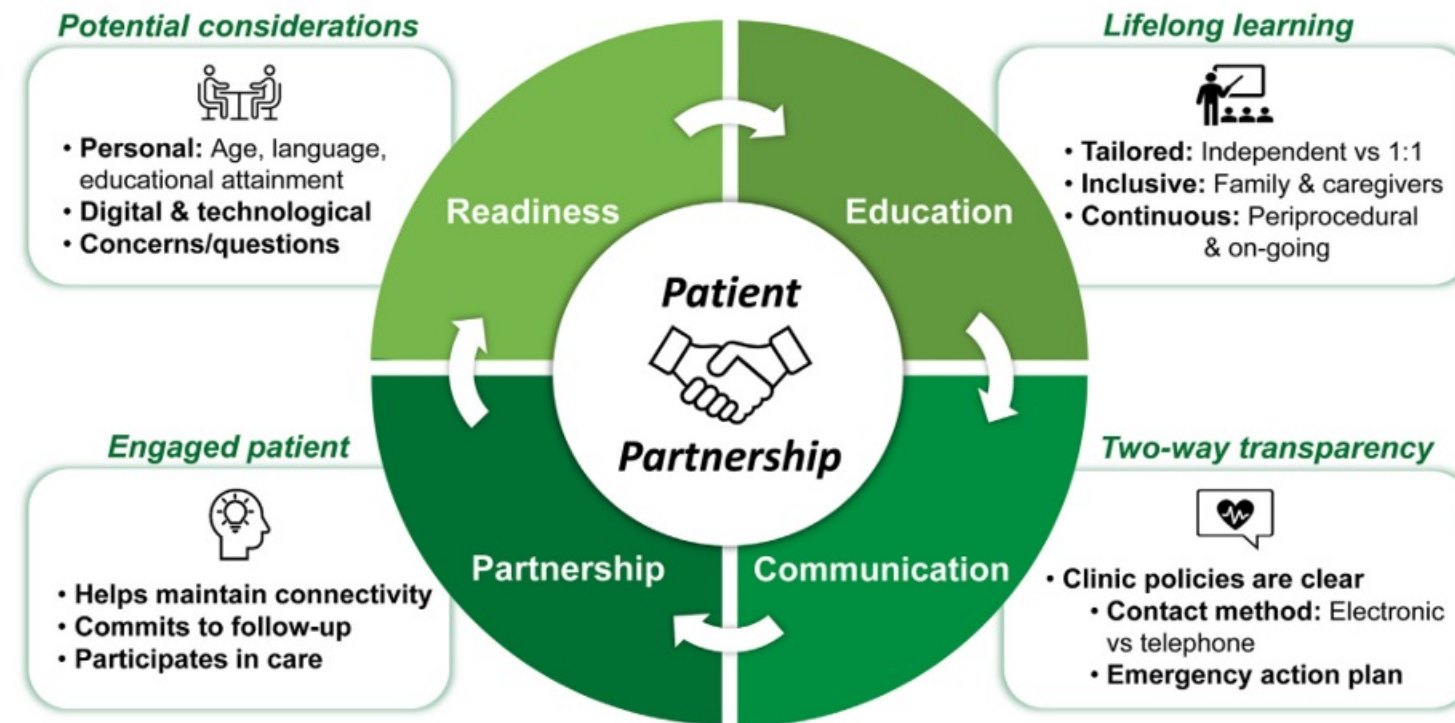
## Ruolo delle aziende produttrici

Recommendations for support surrounding implantation from manufacturers			
COR	LOE	Recommendations	References
1	C-E0	1. For patients undergoing CIED implantation, it is recommended that manufacturers provide adequate resources, including personnel as appropriate, to ensure enrollment and connectivity to RM platforms before discharge or within 2 weeks of implantation.	
1	C-E0	2. For the care of patients undergoing CIED implantation, it is recommended that manufacturer representatives provide the clinic staff with adequate training to properly program remote alerts specific to the clinical indication to minimize inappropriate alerts and need for consequential reprogramming.	

Recommendations for manufacturers' role in the management of patient safety advisories via RM			
COR	LOE	Recommendations	References
1	C-E0	1. For the care of patients with CIEDs on RM, manufacturers should contact the managing clinics with details of a safety advisory and assist in identifying affected patients both immediately and on a regular basis.	
1	C-E0	2. For the care of patients with CIEDs with an advisory and on RM, manufacturers should provide guidance to clinics on optimal alert settings to manage the safety advisory.	

#ForumRisk18

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Grande attenzione ai modelli organizzativi, ai ruoli differenti ed ai carichi di lavoro

Possibilità di modelli organizzativi tailor made

Necessità di evidenziare il lavoro svolto per ottenere risorse (riconoscimento DRG, impegnative, referti)

Importanza della formazione efficace e continua

## LE REGOLE DI UNA SCIATA PERFETTA



- 1) PROGRAMMARE L'ATTIVITA'
- 2) SCEGLIERE I MATERIALI PIU' ADATTI
- 3) SCEGLIERE I COMPAGNI DI VIAGGIO, ALLENAMENTO
- 4) CHIARA DEFINIZIONE DEI RUOLI, DA MANTENERE

## I RISCHI DA EVITARE



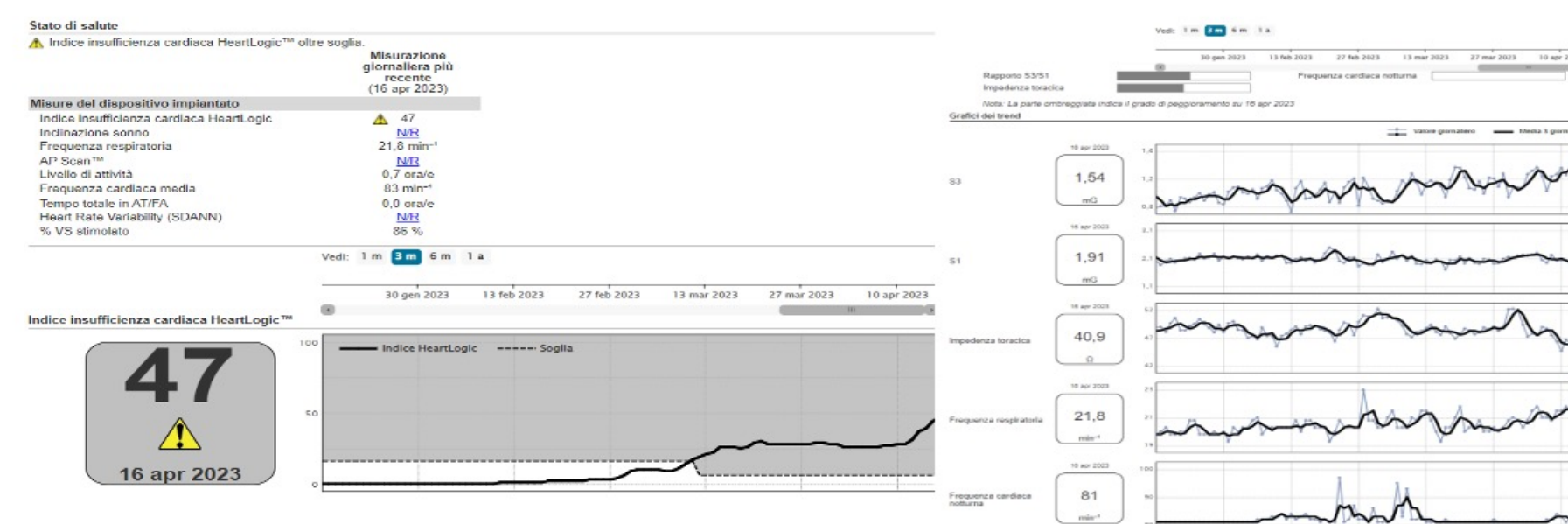
- 1) IMPROVVISAZIONE
- 2) BASARSI SULL'ENTUSIASMO INIZIALE PER L'IMPRESA
- 3) CARICO DI LAVORO ESPONENZIALE CON EFFETTO VALANGA



## PROSPETTIVE FUTURE

Controllo in office necessario?





- Riscontro al monitoraggio remoto multiparametrico dell'ICD biventricolare di incremento degli indici di scompenso. Alla visita ambulatoriale evidenza di riacutizzazione di scompenso cardiaco. All'RX torace riscontro di esteso addensamento parenchimale in parte consolidativo e in parte groundglass, in campo medio inferiore a destra, versamento pleurico bilaterale e segni di sovraccarico del piccolo circolo. Ricoverato per unloading e decongestione.

## Caso clinico 2

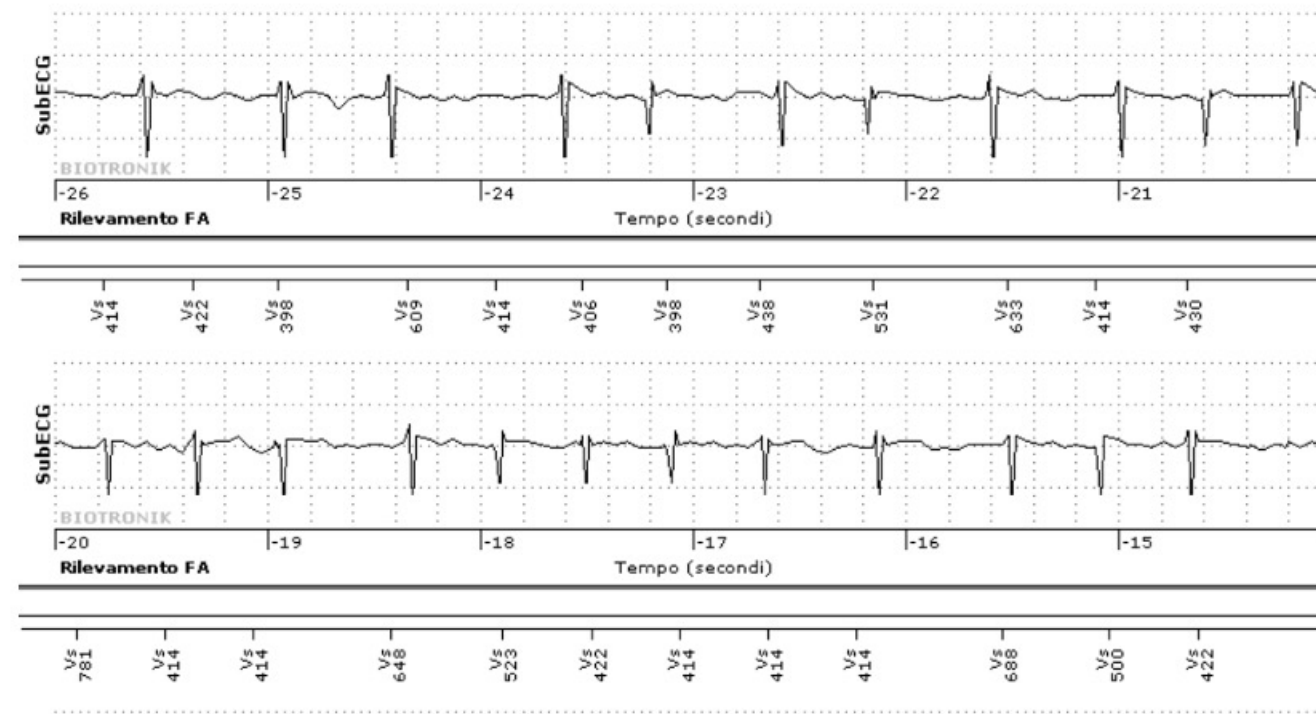
- A.E., uomo di 81 anni.
- Impiantato PM bicamerale nel 2020 per sindrome bradi-tachi.
- Attivato monitoraggio remoto.



- Al controllo evidenza di rumore su EC ventricolare e alti valori di impedenza.
- Eseguita sostituzione dell'elettrocatteter.

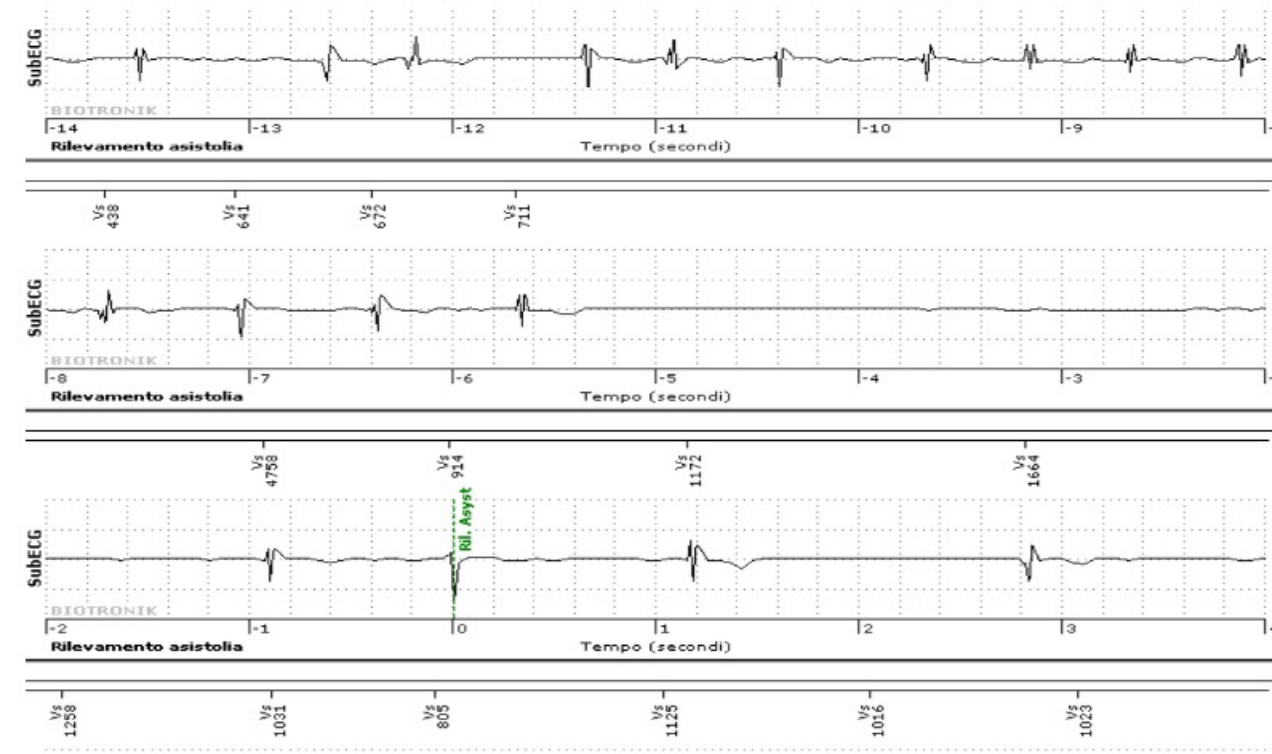
## Caso clinico 3

- G.F., donna di 69 anni.
- Ictus cerebri criptogenetico, per cui impiantato Loop Recorder per ricerca di FA.
- Attivato monitoraggio remoto.



**Da remoto riscontro di FA > 3 ore → indirizzato alla Neurologia per le cure del caso.**

**Per evidenza di lembi di FA ad elevata penetranza ventricolare (150 bpm), eseguita visita ambulatoriale per modificazione di terapia medica.**



Con il prosieguo del monitoraggio remoto riscontro di pausa diurna di 4.8 sec, per cui veniva contattata per modifica della terapia medica ed eseguito successivamente impianto di PM per consentire titolazione di betabloccante per FA rapida.

### **Delitti in materia di violazione del diritto d'autore (Art. 25-novies, D.Lgs. n. 231/2001) [articolo aggiunto dalla L. n. 99/2009]**

- Messa a disposizione del pubblico, in un sistema di reti telematiche, mediante connessioni di qualsiasi genere, di un'opera dell'ingegno protetta, o di parte di essa (art. 171, legge n.633/1941 comma 1 lett. a) bis)
- Reati di cui al punto precedente commessi su opere altrui non destinate alla pubblicazione qualora ne risulti offeso l'onore o la reputazione (art. 171, legge n.633/1941 comma 3)
- Abusiva duplicazione, per trarne profitto, di programmi per elaboratore; importazione, distribuzione, vendita o detenzione a scopo commerciale o imprenditoriale o concessione in locazione di programmi contenuti in supporti non contrassegnati dalla SIAE; predisposizione di mezzi per rimuovere o eludere i dispositivi di protezione di programmi per elaboratori (art. 171-bis legge n.633/1941 comma 1)
- Riproduzione, trasferimento su altro supporto, distribuzione, comunicazione, presentazione o dimostrazione in pubblico, del contenuto di una banca dati; estrazione o reimpiego della banca dati; distribuzione, vendita o concessione in locazione di banche di dati (art. 171-bis legge n.633/1941 comma 2)
- Abusiva duplicazione, riproduzione, trasmissione o diffusione in pubblico con qualsiasi procedimento, in tutto o in parte, di opere dell'ingegno destinate al circuito televisivo, cinematografico, della vendita o del noleggio di dischi, nastri o supporti analoghi o ogni altro supporto contenente fonogrammi o videogrammi di opere musicali, cinematografiche o audiovisive assimilate o sequenze di immagini in movimento; opere letterarie, drammatiche, scientifiche o didattiche, musicali o drammatico musicali, multimediali, anche se inserite in opere collettive o composite o banche dati; riproduzione, duplicazione, trasmissione o diffusione abusiva, vendita o commercio, cessione a qualsiasi titolo o importazione abusiva di oltre cinquanta copie o esemplari di opere tutelate dal diritto d'autore e da diritti connessi; immissione in un sistema di reti telematiche, mediante connessioni di qualsiasi genere, di un'opera dell'ingegno protetta dal diritto d'autore, o parte di essa (art. 171-ter legge n.633/1941)
- Mancata comunicazione alla SIAE dei dati di identificazione dei supporti non soggetti al contrassegno o falsa dichiarazione (art. 171-septies legge n.633/1941)
- Fraudolenta produzione, vendita, importazione, promozione, installazione, modifica, utilizzo per uso pubblico e privato di apparati o parti di apparati atti alla decodificazione di trasmissioni audiovisive ad accesso condizionato effettuate via etere, via satellite, via cavo, in forma sia analogica sia digitale (art. 171-octies legge n.633/1941).

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